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EDUCATIONAL SURVEY

OF

JANESVILLE, WISCONSIN



ISSUED BY

C. P. CARY

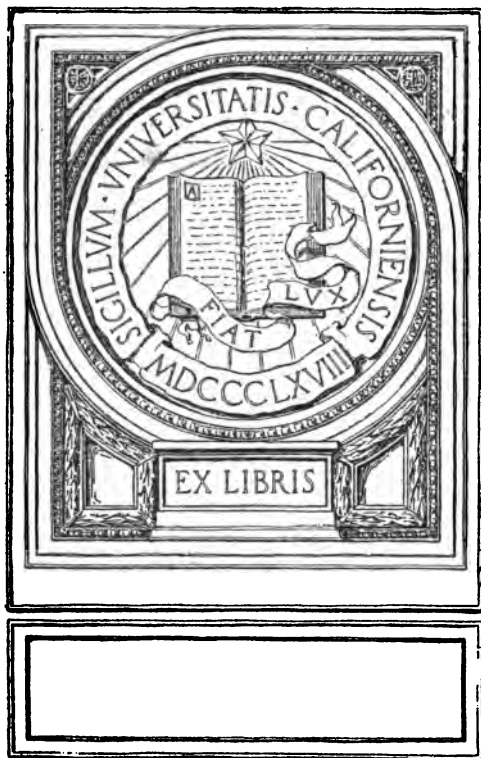
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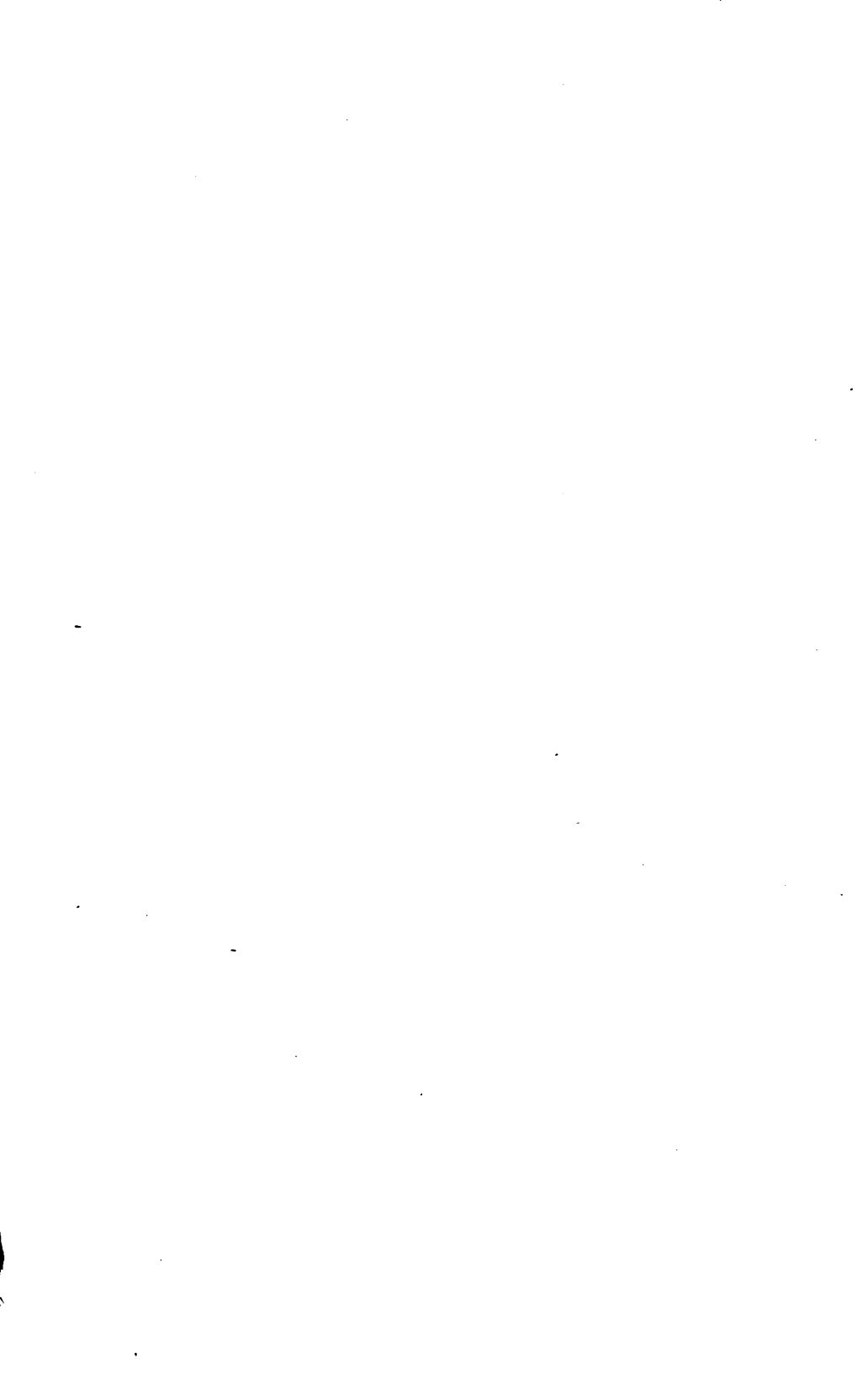
STATE DEPARTMENT OF PUBLIC INSTRUCTION

MADISON, WISCONSIN

1918

GIFT OF





Wisconsin, Dept. of Education

AN EDUCATIONAL SURVEY OF JANESVILLE, WISCONSIN

ISSUED BY
C. P. CARY
State Superintendent

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State of
California

STATE DEPARTMENT OF PUBLIC INSTRUCTION
MADISON, WISCONSIN
1918

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INTRODUCTION

The survey of the Janesville schools was undertaken by the State Department of Education upon the invitation of the Board of Education of that city. In accepting the invitation, the State Department of Education was not unmindful of the amount of labor it entailed. The acceptance was prompted not only by a willingness to point out the educational needs of a particular city, but by a desire to present in organized form for the schools of Wisconsin the views of the State Department on city school administration. The report is transmitted with the hope that the statements of general principles contained therein may result in an improvement in the work of city schools in Wisconsin.

The survey has been carried on under the general direction of State Superintendent C. P. Cary. Active direction of the field work and of the preparation of this report has been in charge of Dr. W. W. Theisen, Supervisor of Educational Measurements. Other members of the survey staff were Mr. H. L. Terry, State Supervisor of High Schools; Dr. B. R. Buckingham, Educational Statistician of the State Board of Education; Dr. H. N. Goddard, State Supervisor of High Schools; Miss Amy Bronsky, State Supervisor of City Grades; Miss Maybell G. Bush, State Supervisor of City Grades; Miss Annie Reynolds, State Supervisor of Teacher Training; Mr. J. M. Dorrans, State Supervisor of Industrial Education; Miss Janet R. Rankin, School Service Secretary; Mr. O. S. Rice, State Supervisor of School Libraries; Mr. A. B. Cook, State Supervisor of Day Schools for the Deaf and Blind; Professor P. W. Dykema, Chairman of the Department of Music, University of Wisconsin; and Miss Lucy Dorrit Hale, Supervisor of Drawing, Milwaukee State Normal School. In addition, special acknowledgment should be given to Mrs. Cecile White Flemming, Assistant Supervisor of Educational Measurements, Department of Public Instruction to Dr. Benjamin P. James, Professor of Psychology and Education, Whitewater State Normal School; Dr. Edgar F. Riley, Principal of the Training School, Platteville State Normal School; Mr. Frank J. Lowth, Principal of the Rock County Training School; and to the students of these institutions who

assisted in the giving and scoring of the tests in various school subjects.

The special lines of investigation undertaken by each member of the staff are indicated by chapters. It was originally intended to include recommendations on educational and financial record forms. The State Board of Education, however, has recently undertaken to formulate a uniform system of records for all city schools of the State, and for this reason any special recommendations at this time would seem to be premature. It is expected that the uniform system for all the city schools will be available for use at the beginning of the school year 1918-19.

Chapter	I	The Problem of High School Organization—Terry
"	II	The Building Problem—Theisen, Terry, Dorrans
"	III	Teachers and Salaries—Theisen
"	IV	Costs and Finance—Buckingham
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"	VIII	Classroom Instruction in Elementary Schools: General Observations of Classroom Instruction—Bronsky Types of Lessons Observed—Bush The Teaching of Classroom Subjects—Reynolds
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"	XVIII	Summary

THE NEW
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Part I

I THE PROBLEM OF HIGH SCHOOL ORGANIZATION

In making definite plans for the future of any system of schools, account should be taken of certain ideas which are becoming very pronounced, in regard to plans of organization and administration of both high schools and of grades below high school.

The belief is becoming very prevalent and widespread that the present custom of making the division between the grades and high school at the end of the eighth year, leaving the last four years for secondary school work, is not wise from either an educational or a physiological standpoint. There is general agreement that there is at present a great loss of time and waste of effort in the seventh and eighth grades; greater than anywhere else in the entire course of study, not only on account of poor methods of instruction but also especially through the use of unsuitable subject matter and an inefficient grouping of students with certain details of promotion and management which dull interest and hamper advancement.

The great work of the grades from the academic standpoint is to give thorough training in the common knowledge which is absolutely necessary for success in any of the great occupations by which people get a living. Without some ability to read, write, calculate, and express thought a person is so hampered as to be almost helpless in his business and social relations with others. This same training also forms an excellent basis for future work in school.

The amount of this absolutely necessary knowledge, however, is much less in some subjects than is generally supposed. The arithmetical calculations, for instance, required of most people are limited to the very simplest operations, only a very small part of the matter covered in the arithmetic used in the grades; the English composition for the majority is mainly confined to

simple business forms and to letter writing; if a person can write legibly with a fair degree of rapidity little question is raised as to the artistic appearance of his penmanship; and so we might go through the entire list of the so-called fundamentals. Thorough mastery of the very simplest operations rather than a wide range of knowledge is what is demanded.

The opinion is becoming common that six years is ample time for the average child if well taught to acquire this absolutely necessary information and skill and that our practice of allowing eight years to do what might easily be done in six, for this is practically what our present course for the eight grades amounts to, is largely responsible for the poor work, lack of interest and falling off of students so common in the seventh and eighth grades. New material is needed, adapted not merely to meet the simple business demands, but such as will widen the interests and give a broader outlook on life with some knowledge of what people do for a living and of their social relationships and obligations.

The thought, too, seems to be rapidly crystalizing that the seventh, eighth and ninth grades form a more natural group in all their activities than we have under the present system of placing the ninth grade with the young men and women of the upper grades of the high school, and the seventh and eighth with the children of the lower grades. Following out this idea in an arrangement of the school system we should have six years of grade work proper, an intermediate or junior high school including what are now the seventh, eighth and ninth years of school, and a senior high school composed of the tenth, eleventh and twelfth years. The belief is so strong that the seventh and eighth grades should receive a different treatment from those below, that many advocate a combination with the high school in a 6-6 plan in schools too small to not permit of the 6-3-3 form rather than to continue the present grouping. It should be understood, however, that the real intermediate or junior high school is an organization distinct from the grades below and the senior high school above, having its own building or distinct part of building, its own principal independent of the senior high school principal, its own peculiar program and course of study, and most of all its own peculiar objects to be attained, these last differing to a very considerable extent from those of either the school above or below.

Among others there are two very pronounced weaknesses common in school work as it is now managed. It is usually safe to say of any class of fair size that from a third to a half of the members might do approximately double the work and be better for it, that as it is they are being trained to dawdle rather than to exert themselves in a vigorous, effective manner. At the same time it is likely that there are some who are being dragged along over work too difficult for them in the vain effort to equalize to fit the whole. That is, the work is not adapted to the capacities and aptitudes of the students as it should be.

Another serious fault is that students are passed through the school and turned out without any definite ideas of the great lines of work which people follow for a living upon which to base a judgment as to their own fitness or liking for any particular occupation.

It is believed that the 6-3-3 type of organization would lend itself much more readily to meeting these defects than is possible under the present system with its subjects and methods so bound and hampered by tradition that it is almost impossible to bring about a real change.

The new organization is as yet free to act in almost any direction. It is not yet out of the experimental stage. In large schools it should be very easy to gather together many groups of like abilities and inclinations and give work accordingly. A comparatively few groups so formed, even as few as three, in any given subject would so nearly meet individual aptitudes that there should be a great improvement over what is possible in indiscriminate sectioning. At the same time promotion should be by single subjects instead of by grades as now, so that when a student has completed a required amount in arithmetic or any other study he may take other work without being held back through not having completed the other subjects of his grade. In the present graded system this is difficult to do because it usually implies a change of rooms and a serious interference with programs. Through such grouping and promotion it would be a comparatively simple matter either to allow the naturally stronger in any particular subject to finish sooner or to take a wider or more difficult range of work while weaker ones were taking the necessary minimum, or another study might be entered upon earlier. Students strong in grammar and weak in

history would be in the corresponding strong or weak sections.

The second great weakness mentioned, that of lack of vocational instruction, should be dealt with to an extent at least in the same manner except that there should be a still greater measure of individualization. After a boy has made a fair effort in working with tools and has demonstrated to his own and his teacher's satisfaction that his tastes lie in other directions he should be allowed to try something else; as commercial work or agriculture. It may finally develop that he should prepare along academic or professional rather than industrial lines. In short the junior high school form of organization as outlined above would seem peculiarly well-adapted to (a) give a good academic preparation for either continued study or for meeting the more common business and social demands of life; (b) to give sufficient practice in a few of the great classes of occupations by which people live to form a basis of judgment as to what will be worth while either to try as a trade or to specialize toward in the senior high school; (c) to give such a knowledge of many special occupations, the nature of the work, wages, cost of preparation for, opportunities they offer for the exercise of true citizenship etc., etc., that a choice may not be made blindly or through a mere haphazard fancy.

To secure these results, however, would require much more attention to industrial work than is now given, probably from one-fourth to one-third of the school time would be none too much even though there were considerable correlation with academic subjects additional. It would also require more rooms and better industrial equipment than is now generally allowed for such grade work. The expense would probably be considerably increased unless the junior and the senior schools were so located and their enrollments were such that equipment could be used in common.

Different plans in regard to buildings for junior and senior high schools, dependent largely upon local conditions, are being worked out in different localities both in our own and other states. One now in use at Menominee, Michigan, places separate buildings near enough together to permit of use by either school of an assembly room, gymnasium, and shops. A second, proposed at Waukesha is a single large building for the two schools with shops, assembly room, and gymnasium which may be used

in common or separately. A third plan is that for the two junior high schools of Kenosha in which each school is in a large building with the lower grades, while the senior high school is at considerable distance. Still a fourth, probably the advisable provision where schools are large, is a distinct building fully equipped for the junior high school alone. This is the plan favored in the larger cities of California.

In any reorganization affecting the buildings, courses of study, or the nature of the work of the schools of Janesville, or any other city, the first question to be settled is—"Shall the plan of a junior high school be adopted?" Until this is settled little can be done according to any settled plan for the future.

The conditions at Janesville seem particularly favorable for the establishment of the junior and senior systems. The present high school building is outgrown for the present four year high school; several new grade buildings are needed, their number and size depending upon the disposition of the seventh and eighth grades. The enrollment is such that the 7th, 8th and 9th grades would form a good working size for a group, and the 10th, 11th and 12th grades would form a good senior high school. These and other facts taken together afford an unusual opportunity for a general reorganization in line with the most progressive schools of the country; not merely a few changes to meet conditions for the time being but a comprehensive scheme looking toward future needs and growth, not merely in number but in possible educational demands as well.

II THE BUILDING PROBLEM

Janesville at present has nine grade buildings and one high school building. The dates of erection, size and valuation may be seen from the table opposite. The table was prepared for the survey by the state architect. With the exception of the Jackson and the Garfield, two of the smaller buildings, and the additions to the Douglas and the Jefferson, all were built more than twenty years ago. The Lincoln, Washington, and Jefferson, with the exception of the addition on the last mentioned building date back more than a half century.

That the city has few good school buildings is a fact that is perhaps familiar to most of its citizens. Several of the buildings are antiquated and poorly suited to school purposes. The amount of capital invested in buildings is small. This is in some respects fortunate. It will mean less in the way of financial sacrifice when the time comes to replace the present buildings by modern schoolhouses.

TABLE I.—*Cubages, Areas, and Values of Public School Buildings, as Computed by the State Architect, May 1917*

Name of school	Year of construction	Cubical content of entire building	Cubical content of classrooms only	Gross floor area of entire building	Net floor area of classrooms only	Net		Present value of buildings	Present value of buildings per cubic foot
						Cub. con.	Floor area		
High school.....	1894	696,500	280,050	50,000	21,390	98,650	6,930	\$85,000	12½c
Jefferson.....	1857	524,185	201,948	31,585	14,355			50,000	8c
	1914 ¹								13c
Garfield.....	1904	129,500	38,955	8,580	3,180			12,000	9¼c
Adams.....	1888	341,000	100,800	22,750	8,400			25,000	7½c
Douglas.....	about 1880	223,440	66,173	13,680	5,190			17,055	5c
	1914 ¹								13c ¹
Grant.....	about 1880	149,940	40,800	9,180	3,200			7,500	5c
Jackson.....	1900	53,240	16,128	3,970	1,344			2,000	38¼c
Webster.....	about 1878	95,890	37,900	6,457	2,800			8,000	5¼c
Washington.....	about 1855	185,730	96,413	13,590	5,313			8,800	4¾c
Lincoln.....	1855	189,300	94,600	15,130	7,965			8,500	4½c
Totals.....		2,588,825	942,057	174,922	73,137	98,650	6,930	220,855	
These items are included in Jefferson school but are used by the Rock County Training School.....		101,100	64,300	6,245	4,345				

The present school buildings are poorly distributed about the city. They are too many in number and several of them are too small both from the point of economical teaching and of cost of operation. Doubtless, they were so placed originally that most of the children would have but a short distance to go. Distance is, however, not the sole criterion and is, in fact, of small consequence in a city of Janesville's size. A reasonable walking distance is even to be desired for health and recreation purposes.

Wherever possible children should be grouped in the ways in which they can profit most educationally. They should be so grouped as to make possible good teaching organization. In the judgment of the survey staff, the present grouping is such as to make good organization next to impossible. It is much to be desired that grades, classes and courses be so arranged that children of somewhere near equal ability and of similar tastes be taught together. As may be seen by reference to the chapter on *Measuring Results in School Subjects*, a diversity of abilities prevails in nearly every grade room. In every group tested, children were found who did far better than the score for the class as a whole. Others were found who did far less. This may be expected because some children are by natural endowment capable of learning more and in less time than others.

If children are economically grouped and taught, there will be some children who can accomplish one of two things; either they can complete the course of study in less time or they can cover a richer course in the same time. On the other hand, children of less ability can complete an amount of work more nearly suited to their own ability. These can progress normally with other members of their own group, whereas under the present arrangement they are more likely to fail of promotion. Nothing is more trying to teacher and pupil than to have some children in a class for whom the work is much too difficult, and others who must mark time waiting for slow children to grasp what to these brighter children is perfectly clear. Such conditions very often lead to loss of interest and lax habits on the part of normally bright children, and to discouragement and loss of interest on the part of the less gifted children.

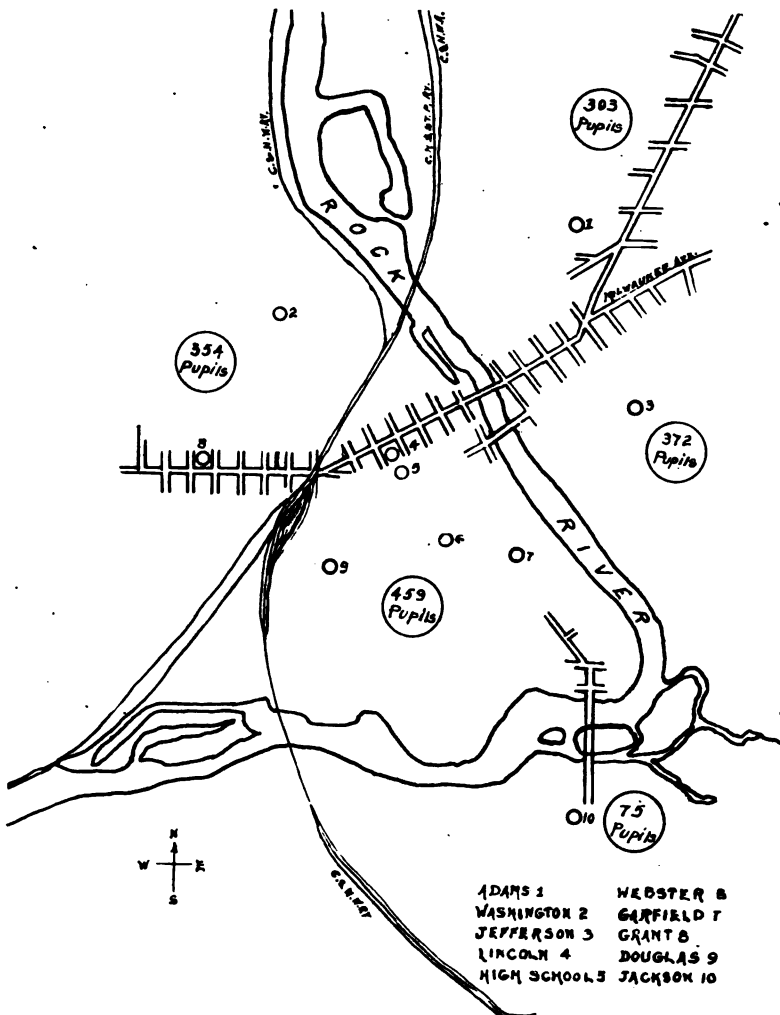
Not only are we forced to recognize a difference in *ability* among children, but also a difference in *tastes*. This difference

in tastes quite often manifests itself strongly at about the time the child reaches the grammar grades. Some indicate a growing desire to explore the fields of industry or commerce. Others exhibit a taste for professional lines. To the boy of a mechanical turn of mind the thought of actually doing things makes a strong appeal. To the girl of domestic inclinations the traditional subjects may seem wasteful and unproductive. Children who show an inclination to learn more about these various fields should be given some opportunity to do so. A form of reorganization such as a junior high school which brings together the children of the 7th, 8th and 9th grades in sufficient numbers can arrange courses which will permit children to further develop these tastes and to discover something as to their own natural fitness for the different life occupations.

The present organization in Janesville tends to retard both the bright and the slow. In view of the desirability of a form of grouping which shall bring children both of like *abilities* and of like *inclinations* together and at the same time provide classes large enough for economical teaching there must be a large number from which to select for the different groups. The greater the number of sections the nearer the approach to individual ability. A combination of the 7th and 8th or 7th, 8th and 9th grades of the entire city into a single building would provide such a number and it is the judgment of the survey committee that it would be wise for the city of Janesville, to bring these grades together for this purpose. More satisfactory results than are now being attained could be had if the children were housed in fewer and larger buildings. If buildings were larger, then this desirable grouping of children according to ability or degree of attainment could be carried out, for it would then be possible to have several sections of the same grade.

LOCATION OF BUILDINGS

The board of education must first of all decide upon the question of organization. The future development of building plans will be affected by the course taken with reference to a junior high school. If the board adopts the junior high school organization recommended by this survey, it will mean that the seventh and eighth grades shall be housed with the ninth in a central plant. At present this would remove more than 300 children



Map showing location of present buildings and the present enrollment of elementary school pupils from each section of the city.

from the present grade buildings leaving about 1500 children to be accommodated in grade buildings.

The board should in the near future adopt a building program. It should decide approximately where all buildings to be erected within the next twenty years shall be placed and the number of buildings the city shall have when this program is in full effect. The accompanying map shows the location of the present buildings, and the number of children now attending elementary school from each section of the city.

Before recommendations can be made with reference to the number and location of future grade buildings some consideration must be given to the probable directions of the city's future development. The city itself is located in a rich agricultural section and has in addition the advantage of good water power. While the city has not grown rapidly within the last two decades, it is not safe to assume that there will not be further development of manufacturing plants.

Manufacturers have in the main chosen sites in near proximity to the river and it is quite likely that they will continue to do so. The combination of the retail business section, the manufacturing plants and the river separates the city into two distinct residential sections. Hence it would be unwise to place grade buildings near the central line of the city. The Adams and Jefferson buildings approximate the ideal location for buildings to the east of the river. On the west side, however, building sites appear to have been chosen with little regard at the time for the probable direction of future growth. The high school building is centrally located as should be the case with a building that is to serve the entire school population, but the same cannot be said of the Webster, Garfield, Lincoln, Douglas and Grant. The needs of the children in the southwest quarter of the city could more appropriately be served by a single building centrally located with reference to that quarter of the city. It is unfortunate, indeed, that the location of the newest building, the Garfield, is such as it is. The Washington site is well-suited to a building which shall serve the northwest quarter of the city. The territory now served by the Grant building could well be divided between two buildings located as we have just indicated. The pupils of the two room Jackson school across the bend of the river should be transported. They cannot hope to

receive good school advantages under present conditions. In the event that a building program is adopted as we have outlined above, it will mean that the city will eventually have four elementary school buildings located approximately in the four quarters of the city. The number of elementary school children to be provided for in each building may be judged by reference to the accompanying map, which indicates the number in each quarter on the basis of the present enrollment.

The central location of the high school plant makes it easily accessible from all parts of the city. The site is fairly free from dust, noise, and smoke and is convenient to the street-car line and the two bridges. The lot, however, is very small and any suitable addition to the present building seems out of the question. Even if a little additional ground could be secured to the west, it would be of such a shape and so hemmed in by streets that it would be very unsuitable.

Again, the present building is a complete unit and does not lend itself well to any addition. A good site of adequate size not far from the present location would be most desirable.

In case the 6-3-3, or junior-senior type of organization is adopted, the ideal high school plant would be a building large enough and planned to accommodate both the junior and senior high schools as distinct organizations. Making allowance for fair future growth, this would mean accommodations for from 1200 to 1500. The lot should comprise several acres or be large enough to provide facilities for the various athletic, playground, and physical training activities which are certain to be increasingly important factors as the coming greater emphasis is laid upon health training.

In case such a high school plant is impracticable, an alternative may be to continue the present building as a senior high school and secure a large enough addition to the Lincoln site across the street, so that a junior high school may be erected upon it. Such a plan, if adopted, should provide eventually for a complete high school building, housing both the senior and junior high schools. The building on the Lincoln site should be made large enough to accommodate both high schools with gymnasium and such other facilities for common use as may be advisable. By adopting a construction plan capable of being added to, the two high schools can be eventually united into a single

building when the present building becomes too old for use and is replaced. Until that is done, the two buildings might be connected by a bridge or possibly it might be feasible to close the short street and add this ground to the present sites.

CONDITION OF THE PRESENT BUILDINGS

As intimated previously Janesville's school buildings are not modern. A school building in order to be modern must be so in at least three respects. It must be modern in construction, arrangement and the purposes which the building itself is to serve. Present day buildings are constructed with a due regard for the type or types of education which the system expects to offer. If a city intends to provide not only for the teaching of traditional subjects but for prevocational or industrial subjects as well, or if it plans to offer gymnasium and assembly facilities, it should take such factors into account in planning its school buildings. A dwelling house is not suitable as a factory. Neither is a school building which was intended to provide for only one type of activity suitable to many. Twenty years ago schools were not offering many of the activities which are now commonplace. Not only have schools made marked progress during this time in the advantages offered, but such matters as proper lighting, heating, sanitation, and ventilation have received careful consideration. When new buildings are erected, the city will do well to take advantage of the progress that has been made.

The only building which can be said to approximate a modern building is the Garfield. The condition of the Lincoln is such as to make it unfit for school purposes. Its use should be discontinued. The Washington and Webster buildings, along with the Lincoln, were classed as obsolete by the state architect. None of the other buildings with the possible exception of the additions to the Douglas and Jefferson can be classed as better than fair.

The Adams

The site upon which this building is located is approximately three-fourths as large as the present enrollment demands.

The classrooms are poorly lighted. The ratio of glass area to floor area ranges from 9% to 18%, whereas good practice re-

quires at least 20%. Unusually wide mullions between windows is a contributing factor to the poor lighting conditions. The smallest of these is $5\frac{1}{4}$ ft. The front windows in several rooms come within 4 ft. of the front of the room. This tends to produce a glare in the faces of the pupils. It is a significant fact that upon the sides considered proper for light to enter only two windows are found in each case. This building should be remodelled to provide sufficient and correct lighting.

This building is one of the few provided with thermostatic control of temperature. It is provided with the so-called "split system" of heating and ventilating and is equipped with an air washer. It is to be regretted that other buildings were not similarly equipped in the matter of heating and ventilating.

The Lincoln

This building occupies a small site directly opposite the high school. The playground area is less than one-half enough to provide an area of 200 sq. ft. per pupil on the basis of enrollment.

Three floors are used for school purposes. Corridors are narrow and dark. The upper corridor measures only four feet one inch, and in addition is used as a wardrobe. The stairways are narrow and in bad condition. The tread dimensions of eight and one-half inch riser with nine inch tread make them unusually steep and dangerous in case of fire. The building is not fireproof. In the judgment of those who examined the building it is a fire hazard. The basement of this building is poorly lighted and ventilated. It is necessary to use electric light even on sunshiny days.

Classrooms are lighted from the left and rear. The light area in all but two rooms is less than 14% of the floor area. The window mullions are nowhere less than four feet.

Toilets are poorly ventilated, depending on windows, doors and floors. The result is that ventilation takes place in part through the classrooms above.

The building as a whole is poorly ventilated, depending on gravity. In mild weather the air movement is almost imperceptible and a disagreeable stench permeates the air unless windows are kept open. The building is used in part by the Industrial school and odors escaping from gas engines fill corridors and classrooms at times.

Five hot air furnaces are required for this building. This condition necessitates a large amount of janitor service and fuel consumption is unnecessarily large.

The building as a whole presents an unsightly appearance both inside and out. More efficient janitor service which places a higher value upon cleanliness of ceilings, floors, walls and windows would add somewhat to its attractiveness.

The Webster

This is an antiquated type of building located on a small site of ground in the vicinity of the river and but a few short blocks from the Garfield and Lincoln buildings. Its corridors are extremely narrow, occupying either side of a central stairway. They are three feet three inches wide and are used as cloakrooms causing an undesirable congestion at dismissal times.

While the classrooms are supplied with a sufficient amount of light, it comes in from three sides. This causes not only cross lights but places an undue strain upon the eyes of the teachers who must face the light.

The Garfield

This building is a four room building erected in 1904. It is a well-lighted and airy building. Here we find the opposite extreme in the matter of corridors and stairways from that found in the Lincoln and Webster. More than one-third of the floor area of each floor is occupied by halls, stairways and cloakrooms. This building has a double stairway to accommodate the two rooms above. Each section measures four feet wide. A single stairway would have been sufficient.

It is indeed surprising that a new four room building erected so late as 1904 should have been provided with two hot air furnaces instead of a single steam plant.

The Grant

The Grant is an exact duplicate of the older portion of the Douglas. It was erected about 1880 near the west limits of the city. While the building occupies an attractive site, it is not well located with reference to the needs of the school population. It is recommended elsewhere that this site be abandoned when the new building program is completed.

The toilets are not modern and are poorly ventilated. If the building is to be used for some years as it may be, modern equipment should be installed. Washing facilities at present are limited to the overflow from drinking fountains in a combination fountain sink.

The Douglas

The Douglas building is located upon a clean and well-drained site of ground. It is made up of the original building and an addition erected in 1914.

Classrooms in this building are among the best lighted in the city.

Each portion of the building is heated by a separate plant. In the opinion of the janitor the hot air furnace which heats the newer portion consumes an undue proportion of coal, while some difficulty is experienced in producing sufficient heat with the present steam boiler for the older portion. It is possible that the latter situation could be improved by proper piping.

This building is one of the few equipped with modern sanitary individual automatic flushing toilets. Toilet rooms are well lighted. The building is noticeable for its cleanliness.

The Jackson

The Jackson is a small two-room building on the outskirts of the city. It is recommended elsewhere in this report that the use of this building be eventually discontinued and the pupils transported. The site occupies low lying ground. It is so low that water interferes with the operation of the heating apparatus at certain seasons of the year.

The classrooms of this building are both insufficiently and improperly lighted. The light area measures 13% of the floor area. Each room has four windows on one side and one on each of the other two sides. Mullions between windows are 28 inches wide. The room now occupied by the third and fourth grades is of unusual dimensions being twenty-four feet long and twenty-seven feet wide. To provide sufficient light for this room will require enlarging of windows.

The toilets for this building are of the common out-of-door type. The urinals were observed to be in a filthy and unsanitary condition.

The Washington

The Washington building occupies a site well adapted for a school ground. The playground is of adequate size to accommodate the present enrollment and is equipped with playground apparatus. A good growth of trees and shrubbery adds to its attractiveness.

This building is more than a half century old. It is regarded as obsolete by the state architect. The serviceableness of this eight-room building is decreased by the condition of the lighting and the small size of its corridors. From the enclosed nature of the four centrally located rooms, it is difficult to provide sufficient light for these rooms. Prism glass has been introduced but the glare was observed to be so pronounced as to warrant the suggestion that its use was unwise. The situation can be somewhat improved by increasing the size of the windows. In the remaining four rooms the light enters from three sides. The toilet rooms in this building are particularly deficient in quantity of light.

Corridors in this building are cramped. The main corridor measures $7\frac{1}{2}$ —8 ft. wide, and in addition is used for cloakroom space. A secondary corridor measures but four feet in width.

The Jefferson

This building is located on a site of ample size. The site with the exception of the southeast quarter is well drained. It has been made attractive through the planting of grass and trees and the provision of playground apparatus.

The building itself is one of the larger ones of the system. There are three floors, the upper of which is now used by the Rock County Training School. This building was at one time used as a high school building. Even though it has been remodeled to some extent, undesirable evidences of the fact still remain.

Classrooms in the older portion are poorly lighted and of improper dimensions for good school use. The light area is but 12% of the floor area when 20 to 25% is to be expected. Unfortunately, the rooms are so constructed that they are wider than they are long as they are now used. The dimensions are 24'x30'. Light enters from one side only but in each case it is the short side. This makes it necessary for the light to pass a dis-

tance of 30 ft. across classrooms. Prism glass has been installed in some rooms but this has been found to produce a troublesome glare.

The building is very inconvenient in arrangement. It is impossible to pass from one end of the building to the other without passing through classrooms. There is no central corridor on either floor. If the cost of remodeling is not excessive some improvements could be made by removing the present cloakrooms, thus adding the width of these rooms to the classrooms. Inside wardrobes could be installed along the wall farthest removed from the light. These could be made a combination blackboard type.

The basement of this building presents a filthy appearance. It has only a dirt floor in places and is being used to store outworn equipment.

The High School Building

In common with many others in the state the Janesville High School has grown within the last few years until the enrollment has become much larger than the intended capacity of the building. Allowing 14 square feet of floor space (not a large allowance) per pupil, the assembly room can accommodate about 400 students. The building in general appears to have been planned for about this number. The present enrollment is 530 or 130 more than it should be for comfort, convenience, or proper sanitation.

The result is that not only the assembly room but cloakrooms and many recitation rooms are so badly overcrowded as to be not only inconvenient but unhealthful and in some cases unsafe. It is surprising that there have been no accidents in some of these rooms; in the girls' cloakroom for instance during the noon intermission when the girls are pushing in and out of the single door and struggling with the mass for their hats and wraps. Rooms are being used for recitation purposes which were originally intended for cloakrooms, museums, or offices; spaces have been partitioned off in the third story for recitation purposes inadequately lighted and ventilated and unsuitable in every way for such use. The attic rooms used for commercial work and the domestic science department are especially objectionable, interfered with as they are by the truss work of the building, incon-

venient of access and very poorly lighted and ventilated. It would seem, too, that there might be serious danger in case of fire though there are two exits besides two fire escapes. A redeeming feature is that of the large halls in the first and second stories which give space for rapid and easy movement of large classes.

The Building Code regulations of the state prescribe that there shall be at least one square foot of glass surface for each six square feet of floor surface; one square foot for every five square feet is recommended. This rule applies to study, class, recitation and laboratory rooms. The assembly room and five classrooms now in use meet these requirements; the remaining eleven rooms used for the purposes stated range from one square foot of lighting surface to every eight feet of floor space, down to less than one-half of the recommended ratio of one to five, several having less than one to ten. None of the rooms used for class purposes are properly lighted. Artificial light is very often necessary during even fairly light days. Some of the rooms are very poorly equipped for this, the electric lights being small and few in number. A number of the rooms, including those in the attic should be absolutely condemned on account of insufficient light if for no other reason.

The adequacy of the heating and ventilating system could hardly be determined at the season of the year when the survey was made. There seems to be strong evidence that the heating plant is insufficient under present conditions. The truth probably is that both the heating and ventilating plants were well adapted to the requirements when the school was of proper size for the building. It is most likely that after more than twenty years of service the heating equipment should be thoroughly overhauled or replaced by new. In short, a very considerable amount of repairs will be necessary to put the building into good condition for even a school of the size originally intended to be accommodated. In addition to this a higher standard of janitor service should be insisted upon.

GENERAL HEALTH AND SANITARY CONDITIONS AND EQUIPMENT OF
BUILDINGS*Lighting*

The question of correct and sufficient lighting is one of no small importance. A system of education which compels a child to attend school should be willing to assure him that his eyesight will be properly safeguarded. An insufficient quantity of light, the glare of direct sunlight, and cross lights are each injurious to the mechanism of the eye. In modern schoolhouses classrooms are lighted from the left only, but of fifty-two rooms, only seven were lighted from the left, twenty-four from the left and rear, two from the right and rear, seventeen on three sides, one from the left and front, and one from two sides. But even though windows are correctly placed lighting may be unsatisfactory because the total glass area is too small. Figures on the ratio of the glass area to the floor area were submitted by the principals. On the basis of a ratio of one square foot of glass area to floor area, the Adams, Grant, Lincoln, Jackson, two of the four rooms in the Garfield, the rooms of the older portion of the Jefferson and four of the eight rooms in the Washington building have an insufficient quantity of light, regardless of the source. There is no building in the city in which the light for all of the rooms is properly distributed. The seventeen classrooms indicated above as having windows on three sides of the room are distributed among five buildings, Adams, Grant, Jackson, Washington, and Webster.

Blackboards

A large blackboard area is a desirable feature of classroom equipment. In this respect the schools are well provided. In some buildings, however, a high grade quality of material has not been used. Patent composition blackboards have not provided a satisfactory substitute for slate. They are expensive because sooner or later they must be replaced, while a high grade slate or ground glass board is practically permanent. The composition boards now in use should be replaced.

Blackboards in order to be most serviceable should be placed at heights best suited to those who are to use them. Small children cannot use a board profitably where a large part of it extends above their heads. In thirty-seven rooms, at present,

boards are from one to sixteen inches too high for children of the grades. In a few rooms children stood on benches to reach the board. In two rooms boards are placed slightly lower than the desired table of heights indicated elsewhere in this chapter.

In many of the rooms boards are wider than is ordinarily required. The space near the top of the board is used by some teachers for illustrative purposes. Whenever new blackboards are installed a saving may be effected by selecting boards according to the table of standards indicated elsewhere. For illustrative purposes a more satisfactory cork bulletin board may be placed at the top of the board.

Seating

The eighth grade of the Adams building is supplied with the most modern type of school desk. It is a combination seat and desk which can be adjusted to the needs of the child. It is movable, permitting the teacher to adapt the grouping of the children at any time to the requirements of the particular class or study period. If she desires to have the children work or study in groups where each may learn from the other, she may do so. If instead of compelling the children in the rear of the room to observe the backs of classmates, she desires to seat them in the form of a semicircle it will be easy to do so. Each pupil in the class can then see the responsive expression which lights up the faces of his classmates when he contributes anything of real merit to the class or group discussion. The backs of pupils and chairs are ordinarily quite unresponsive and not adapted to drawing from the pupil his best efforts to make a convincing impression on his class mates. Too often the recitation is little more than a dialogue between pupil and teacher. Some of the qualities we value most include the ability to discuss a topic before a group of active listeners. If these valued social qualities are to be enhanced, the type and arrangement of seats in the classroom should be such as to facilitate that kind of teaching. It is to be hoped that as the old type of seats are discarded they will be replaced by substantial seats of the movable kind.

With the single exception above, the seats in all rooms except kindergartens are of the stationary type. Unfortunately an insufficient number of these are adjustable. With the exception of the Jackson building every building has

some rooms with non-adjustable seats. This condition would be less serious were it not for the fact that all too frequently the seats in a room are of one size only. The children of a room are not often all of one size. In one room of the Washington building the feet of eleven out of the thirty-six children in the room did not touch the floor. Even with the present equipment an immediate attempt should be made to distribute the seats in use to fit as nearly as possible the physical needs of the children. Janitors should be instructed as to proper arrangement of seating. It is generally agreed that for seats of the stationary type the front edge of the seat should extend two inches beyond a line dropped vertically from the edge of the desk. However, no uniformity in this respect was found in any of the buildings. In some cases seats and desks "lapped" as much as four and one-half inches and in others failed by two inches to "lap" at all.

Cupboards and Filing Cabinets

The buildings are inadequately provided with storing and filing facilities. Unfortunately most of the building plans did not take the need of store room facilities into account. Teachers are handicapped by this lack of room. When such equipment is not provided, books and other materials are not apt to receive the best of care nor can they be put away in such manner that they can quickly be brought out again when necessary. Often times it is very desirable and profitable to the teaching and supervision if samples of children's work can be properly filed. Such material can be used to indicate improvement over a given period of time or to indicate possible degrees of attainment. Cupboard and filing facilities are comparatively inexpensive and the board should make immediate provision for this necessary equipment. For temporary filing or exhibit purpose cork bulletin boards may be added to the classroom equipment.

Floors

All buildings have been provided with good maple floors. This makes a smooth good wearing surface, that can be easily cleaned. In the construction of new buildings, however, it will be well to provide for fireproof construction. If floors are made of concrete they can be overlaid with patent process finish or

covered with heavy battleship linoleum. Either of these is superior to wood floors in many respects. They are easily cleaned, noiseless and free from cracks.

Stairways and Corridors

An open stairway of the "well-hole" type provides a constant danger to the children who use it. Such open stairways as found in the Adams building should be remedied at once. Stairways in this building are of the winding type with a low banister railing. It is a very easy matter for some children to be pushed over the banister. The janitor of this building reports that in the past some children have fallen over. Luckily no serious accident has happened thus far. Good stairways provide either a solid balustrade or steel banisters five feet high. With a solid balustrade stairways can be inclosed making it less likely that smoke will fill the passage way in case of fire.

Unless the tread and riser of a stairway are of the proper proportions the step produced is not one which is adapted to the natural step of the child or other person using it. It may be too flat or too steep. In the case of a sharply rising stairway the tread may be even dangerous. The danger of falling on such a stairway as that in the Lincoln building where the tread and riser measure 9 and 8½ inches respectfully is obvious; tread and riser dimensions 11 x 6½ in. are both safe and comfortable to the user.

The corridors in the Lincoln, Webster, and Washington are much smaller than good schoolhouse architecture demands. The second floor corridor of the Lincoln building, indicated elsewhere as a fire hazard, is only slightly more than four feet wide in places. In addition it is used as a cloakroom. Good corridors should be 8-12 ft. wide in grade buildings.

Toilets

Adequate sanitation requires that toilets shall be clean, well-ventilated and properly equipped. A number of buildings have toilets that are poorly ventilated and located in some dark and damp corner of the basement. Immediate steps should be taken to enlarge the windows in toilet rooms to admit a sufficient quantity of light and to provide for proper ventilation. In the interest of health and morals toilet rooms should be as well

kept as other parts of a school building. There is no reason why standards of toilet room sanitation and appearance should be any less than that found in good homes. The toilet rooms in nearly all buildings are provided with open stalls. A due regard for privacy demands that doors be provided. They can be made in slatted form to admit light and of a height that will permit supervision. Each stall should be equipped with paper holding facilities of a kind which prevent excessive waste. At present it is customary to provide only one or two rolls of paper for the entire toilet room. The present form of porcelain urinal troughs should be discontinued as soon as those now in use are outworn. They should be replaced by a form that is adapted to continuous flushing and that is suited to the height of all children.

Toilet room fixtures in some cases are not well adapted to the height of the children. The seats in the kindergarten room of the Douglas building unfortunately are adult size.

In all cases washing facilities should be provided in toilet rooms or in some adjoining room. Children should be required to use them. Parents teach children as a matter of habit to wash immediately after using the toilet and the school should in no way tend to break down this habit. With the present washing facilities it is altogether improbable that the children will keep up this habit. The toilets in several of the buildings have no washing facilities whatever. The only facility for washing in many cases is a small combination sink and fountain in the main corridor of each floor. The water in these is always at a low temperature. No soap is provided and frequently no towels.

Water Supply

A sufficient number of lavatories should be provided to furnish washing facilities in toilet rooms and on each floor. Paper towels and liquid soap should be furnished. It is regrettable, indeed, that too much economy is practiced in this respect. In only a few buildings was there any soap of any kind to be found. On the other hand a number of children were observed whose hands were in evident need of washing. The teaching of hygiene or physiology should be of such a practical nature that good personal habits are established by the children, and the school should provide proper facilities to permit the children to apply the classroom teaching.

The combination sinks and drinking fountains now in general use throughout the buildings should be replaced. Children should not be required to depend for wash water upon the overflow from the drinking fountain. The present arrangement results in an insufficient supply of water at undesirable temperatures and makes an unsanitary appearance. Warm water for washing purposes should be supplied in all buildings.

Heating and Ventilating

The method of heating employed in the Garfield, Jackson, Lincoln, Washington, Webster and a part of the Douglas building is that of the hot air furnace. This system is costly and is not suitable to a building of any size, a fact which can be judged from the number installed in the above mentioned buildings. The number and kind of heating plants and the number of classrooms, not including basement rooms, can be seen from the following table. The undesirability of the hot air furnace

TABLE 2

Building	No. of classrooms	No. heating plants	Type of heating system
High School.....	22	1	steam
Adams.....	8	1	steam
Douglas.....	6	2	hot air and steam
Garfield.....	4	2	hot air
Grant.....	4	1	steam
Jackson.....	2	1	hot air
Jefferson.....	12	1	steam
Lincoln.....	12	5	hot air
Washington.....	8	4	hot air
Webster.....	4	2	hot air

may be judged from the number found in the Lincoln and Washington buildings. A consequence of the present system in these buildings is an undue amount of janitorial service and excessive fuel cost. This type of heating system should not be installed in any new buildings to be erected. Whenever new boilers are installed they should be of the sectional type. This will permit of enlarging in case of an addition to the building. Had this plan been followed in the Douglas, we would not find there now both a steam plant and a hot air system each serving a portion of the building.

The system of ventilation in a number of buildings is of the

"gravity" type. This system requires a low outside temperature for efficient service. In temperate weather there is little circulation of the air. A better type of ventilation is that furnished by such a system as that in the Adams building. This system is a so-called "split" system. The heating and ventilating systems are separate. During school hours a fresh supply of heated air is introduced by means of a motor driven fan. The direct radiators are on separate piping and are used for initial heating and for keeping the building warm after school hours or in extremely cold weather. This building is further provided, as should be the case, with an air washer for insuring clean air with a proper amount of moisture. The air as it comes into the building passes through the washer and then over tempered coils. The washer, however, was turned off at the time the building was visited. This should not be done. The health and comfort of the children demand that heated air entering a schoolroom shall contain a relative humidity of 40-50%.

Cleanliness

The janitors could very profitably be instructed in methods of cleaning school buildings. They need also to be instructed on such matters as the relation of dust to disease. In two of the buildings it was noticeable that the pride of the janitor in a clean building had much to do with the appearance of the floors, hallways and windows. In other cases windows were in need of washing and floors presented a dusty appearance, even when swept. Sweeping compound is used, but all too sparingly in some buildings. An inexpensive "home made" sweeping compound should be provided in sufficient quantity at all times. The efforts of the janitors to keep buildings clean can be aided by better grading of the school grounds. This is especially true for the grounds of the Adams building and for the southeast quarter of the Jefferson.

The installation of vacuum cleaning apparatus would aid materially not only in cleaning floors but in cleaning walls and ceilings as well. In a number of rooms, particularly in the Lincoln building the walls and ceilings presented a dirty appearance. Schoolrooms should at least be clean and inviting if nothing more. With adequate facilities for cleaning ceilings, floors, and walls readily, together with some instruction of the

janitors on proper methods of cleaning school buildings, it should be impossible to find an unsanitary room in any building.

The efficiency of the janitor service could be very much improved by the employment of a competent supervisor of janitors and buildings serving under the immediate direction of the superintendent. He should be a competent engineer familiar with the various types of heating and ventilating systems and the best methods of operating them. He should be a man familiar with accepted standards of schoolhouse construction and arrangement and the methods of keeping buildings in a sanitary condition. He could very well act as head janitor of some large building such as the high school. A portion of his time could profitably be spent in visiting other buildings, supervising the janitors and instructing both janitors and principals in methods of cleaning and caring for buildings.

Fire Protection

Entrances to all buildings should be equipped at once with fire bolts. A due regard for safety must be constantly maintained or the city may with some reason live in fear of a repetition of the celebrated Collingwood fire. Without fire bolts doors are apt to be found securely fastened at a time of panic. Fire drills, fire extinguishers and fire escapes especially of the type now in use are insufficient protection. The present buildings are not of a fireproof construction. Moreover, several buildings are heated all or in part by hot air furnaces which add to the danger from fire. The type of fire escape now provided is that of the iron exterior stairway type. The common method of access to these is through classroom windows. In case of a fire on the lower floor this furnishes a grave danger for the children above in case they attempt to use it. The stairway becomes so hot that it cannot be used with safety. In buildings that are to be used for some time, fire escapes of this type should be replaced by an enclosed spiral type. In the better type of modern buildings, the ordinary interior stairway is fireproof and smokeproof and so shut off from the remainder of the building that it forms the natural means of fire escape. Moreover, the children are less apt to become panic stricken since they make use of the customary means of going out of the building.

Fire gongs which can be readily sounded from each floor and

heard in all parts of the building should be installed. Under the present arrangement the signal for fire drill in a number of buildings is given by ringing a hand bell usually in possession of the principal. It is by no means asured that a fire, if it should occur, would necessarily break out in or near the principal's room. While attention has been given to fire drill in all buildings, it was found that it does not always operate successfully when the signal comes from other than the customary source nor are all schools equally proficient in this type of work. In the Lincoln building, the most dangerous fire-trap in the city, seven rooms failed to heed the signal given at the request of members of the survey staff.

Fire extinguishers are now provided but fire fighting apparatus which includes only fire extinguishers is insufficient. The buildings are not provided with fire water piping and fire hose as should be the case in all properly fire protected buildings. Most assuredly neither the school authorities nor the public care to have the children exposed to undue dangers from fire. It is recommended that immediate steps be taken to provide adequate fire protection in all buildings.

STANDARDS FOR SCHOOL BUILDINGS AND GROUNDS.¹

In the erection of new buildings, modern principles of school-house construction should be observed. The following are recommended as standards for school buildings and sites. While these standards apply more fully to new buildings a number of them may be made use of in remodeling or improving the buildings now in use.

I. Sites.

Whenever the board decides to select a new site, it should choose one large enough for the proper placing of the building and for adequate playgrounds. Two hundred square feet of playground surface per pupil is not too large for elementary schools. A high school with its athletic field requires even more.

¹ Adapted from a brief on school buildings by Gambrill, Theisen, and Woody, Dept. of Educational Administration, Teachers' College, New York (Unpublished). The brief is a compilation of the opinions of leading school architects, authorities on school hygiene and sanitation, and school administrators.

II. Buildings.**A. Orientation and Position with Reference to Site—**

The orientation should be such that schoolrooms can be lighted from the east or west. This affords ample light and sunshine. A southern exposure is to be avoided on account of glare, and a northern because of insufficient light and sunshine.

The building should not be too near a noisy street. It should permit a maximum utilization of playgrounds and allow future additions.

B. Gross Structure—

1. Type—A building should be of the open T, H, E, V, or Y, with provision for unit additions.

2. Materials—Vitrified brick with terra cotta trimmings is preferable. The building should be fireproof throughout.

3. Height should be not more than two stories above the basement.

4. Foundations should be of reinforced concrete with wide footing. They should be water-proofed and damp-proofed.

5. Walls—Outer and interior bearing walls should be of hard brick laid in cement. Interior nonbearing walls should be of hollow tile.

6. Roof—This should have only a slight pitch and should be surfaced with thick slate laid in high melting asphalt. This is durable, water-proof and economical. Its cost is much less than that of tile roof.

7. Entrances—The central entrance should be 10 to 12 ft. wide. Secondary entrances should be 8 to 10 ft. wide and near stair landings. If a gymnasium is provided, one entrance should lead directly from the playground to the gymnasium. To protect small children in case of fire, the kindergarten room should have a separate entrance. All entrances should be free from obstructions.

(a) Vestibules—should be 10 to 12 ft. wide with double swinging wire glass doors and water-proof floors.

(b) Doors—There should be two pairs of double doors opening outward. There should be no pockets or space between the doorways and walls of the vestibules where children might be massed in case of fire. They should be substantial, but light enough so that small children can open them. Firebolts and automatic closing devices should be provided.

8. General appearance—A building should be symmetrical and pleasing to the eye, but extensive and costly ornamentation which does not add to utility should be avoided. Variations in construction which add to appearance but not to cost are to be desired.

C. Internal Structure—

1. Stairways—These should be of fireproof construction. It is preferable that they be isolated by wire ribbed glass partitions from the corridors and from the remainder of the building by solid fireproof balustrades. This obviates the need of separate fire escapes.

To provide for durability and fireproofness, stairway frames should be of steel and encased in cement with treads of the same material.

Metal handrails with ends turned into wall should be provided on both sides of stairs. Where both large and small children are to use the stairway, two sets of rails at varying heights should be furnished.

A good width for stairways is 5 feet. This will permit two rows of children to ascend or descend without crowding. Steps having a tread of 10 to 12 inches and a 6½ inch riser are satisfactory.

Stairways should be located on outer walls at the intersection of main and secondary corridors and should lead directly to exits. This, will provide for safety and a minimum of travel distance between various parts of the building.

2. Corridors—The location should be determined by the position of the classrooms and special rooms and ease of access to stairways. They should be made of durable material, fireproof and noiseless. Cement overlaid with patent process or battleship linoleum is most desirable. In grade buildings the main corridor should be 12 ft. wide. Secondary corridors may be 8 ft. The main corridor of a high school building should be 14 to 15 ft. and secondary corridors 10 ft. wide. They should be adequately lighted. Lockers, cases and other obstructions are undesirable in a corridor.

3. Basement or Ground Floor—It should be not more than 3 ft. below grade level with a ceiling of 12 to 15 ft. This provides for light and space for heating and ventilating ducts.

The boiler room, fuel room and room for heating apparatus should be effectively shut off from the remainder of the building by masonry walls, fireproofed at the ceiling. Good practice provides no doorway to the remainder of the basement.

The ceiling should be sound proof.

4. Classrooms—

a. Location—They should be grouped on each side of the corridors so as to be accessible to exits and stairways and to maintain a high proportion of classroom to corridor space.

b. Construction and Finish—

(1) Size for grade classrooms—Allow not less than 15 square feet of floor space and 200 cu. ft. of air space per child. The standard size 22x28x12 ft. seats 30 pupils. A few rooms should be larger seating 35 to 40 pupils; a few, smaller seating 20 pupils—the latter for the use of special classes. A few rooms which may be converted into double rooms upon occasion should be arranged with sound proof adjustable partitions between them.

High school classrooms should vary in size to suit the number of students to be accommodated in different subjects. The standard size 22x28 should be the maximum except for 2 or 3 which may be 24x32 for lecture sections of 50 pupils.

(2) Floors—Cement overlaid with hardwood or battleship linoleum makes a very desirable floor. These floors are smooth, durable, sound proof and will not retain dust.

(3) Walls and ceilings—Hard smooth non-glass plaster should be used except for dado where cement plaster is preferable.

(4) Doors—Wire ribbed glass doors (2 ft. 8 in. x 7 ft., with a 6 inch clear area in the upper half are most satisfactory. Glass doors permit light to enter the corridor and the clear space permits observation without interruption of class activities. Doors should swing in both directions. Transoms and thresholds are unnecessary.

(5) Closets—Each room should have at least one. It should be adapted to the building construction and the location of wardrobes.

(6) Blackboards and bulletin boards—Highest grade slate or ground glass, dull black is most satisfactory. They should be placed at heights and be of a width suited to the size of the children. Satisfactory heights of chalk rail are by grades 1-2, 24 in.; 3-4, 26 in.; 5-6, 28 in.; 7-8, 30 in.; high school, 32-36 in. Good widths are in grades 1-3, 28 in.; 4-6, 32 in.; 7-8, 36 in.; high school, 36-40 in. The amount of sur-

face must be determined by the children to be accommodated. Double sliding boards in the front of classrooms and lecture rooms are very desirable for demonstration purposes. Since about 50% of the light striking blackboards is absorbed, light curtains should be provided for covering boards on dark days when not in use. Space not provided with blackboards or space above boards should be provided with cork bulletin boards for illustrative purposes.

(7) Color scheme—Suitable colors for walls are light buff, very light green or gray. White or light cream are best for ceilings. The dado should be slightly darker than the walls. The woodwork and furniture should be of dull finish and harmonize in tone.

c. Illumination—

The glass area should be $\frac{1}{6}$ – $\frac{1}{4}$ of the floor area. The presence or absence of light obstructions effect somewhat the area required. Windows should be on one side of the classroom only. Where movable furniture is used the light may come from the rear and one side. The windows should be grouped with narrow steel 8 inch mullions between. They should be as near the ceiling as possible and $3\frac{1}{2}$ –4 ft. from the floor. The first window nearest the front should not be nearer than 7 ft. from the front wall. Ribbed (not prism) glass is preferred by some. This breaks up direct rays, does not produce glare and requires less washing than prism glass. Shades should be adjustable from the center. Bisque or light sage colors are most desirable.

d. Cloakroom, Wardrobes—To facilitate teacher control the cloakroom should rarely be accessible from the corridor. The recessed wardrobe type of cloakroom obviates the necessity of separate cloakrooms. These should be 2 ft. in depth, and well-ventilated. The height of hooks should be adapted to the children. Umbrella and shoe racks add to convenience.

e. Equipment—Individual adjustable, movable seats of good construction are most satisfactory for all around purposes. Movable furniture is better adapted than any other to the social pur-

poses of the recitation and makes it easy to adapt the room for use of either older or younger grades.

5. Special Rooms—

a. Auditorium—A good modern school building provides auditorium facilities for the school and the community.

Its location should be central and on the first floor in order to make it accessible from classrooms and the main entrance when used for community purposes. The seating capacity should accommodate 50% of the pupils in grade buildings and 100% in the high school.

The floor should be level and furnished with movable tiers of seats in order to permit a maximum use for such purposes as festivals, social center meetings and recreation.

It should be provided with a stage of sufficient depth for use with large choruses and class plays, and convertible into an accessory gymnasium.

b. Gymnasium—The gymnasium should be in the basement and accessible from the playground in order to permit its use while the remainder of the building is closed. The minimum size should be not less than 50'x80'x15'. This height will be necessary to permit basketball games. A roller partition may be provided dividing the room into parts, 40'x50' which may be used separately by boys and girls. The room should be sound-proofed from classrooms. There should be provision for a spectator's gallery. Separate locker rooms, showers and dressing rooms will be necessary for each sex.

c. Alternative Plan for Combined Auditorium and Gymnasium—For reasons of economy, particularly in grade buildings it may be advisable to combine gymnasium and auditorium. In such event, the room should be equipped primarily as a gymnasium and fitted with a stage.

d. Teachers' rooms—Each building should be provided with a teachers' rest room, equipped with dressing room and toilet facilities. In the case of high school buildings, 2 rooms—one each for men and women should be provided. 18'x22' is a sufficient size for these rooms.

e. Nurses room—A small room on the first floor well-ventilated and properly equipped should be provided for the use of the school nurse and for emergency sickness.

D. Special Service Systems—

1. Toilets—For grade buildings a basement location is best. Small emergency toilets may be provided on each floor. Separate toilets should be provided for kindergarten children accessible only from the classroom. In the high school toilet facilities should be provided on each floor for both boys and girls.

Toilets should be properly secluded and afford privacy to individuals. Stalls should be provided with doors set 10 in. above the floor and 4 ft. in height, painted white.

The fixtures should include porcelain seats of the open type with individual automatic flush. Urinals should be of white carrara glass which is nonabsorbent and easily cleaned, or alberene or good quality slate. Fixtures should be of different heights to accommodate both large and small children. One seat and one urinal is required for each 25 boys and one seat for each 15 girls in grade buildings. About 20% less will be required for high schools. Paper towels and washing facilities should be provided in toilet rooms or rooms adjoining.

Good sanitation makes a southern exposure desirable for toilet rooms in order to provide good light and sunshine. Toilets and urinals should be ventilated directly down and through them to prevent odors escaping. Ceilings should be sound-proof and odor-proof.

2. Water supply—One automatic bubbling fountain easy of access from classrooms is required for each 75-100 children. Fountains should be wall-attached to facilitate cleaning. They should be at heights adapted to the children. No drinking fountains should be found in toilet rooms.

Washbowls should be adapted to the height of the children. They should be placed in toilet rooms, shower rooms, teachers' rooms, janitor's room and laboratories.

3. Cleaning system—A system of stationary vacuum cleaners should be installed. It should include permanent piping designed to bring every part of the building within 50 ft. of a hose outlet.

4. Heating and Ventilation—The kind of system at present considered most satisfactory is known as the "split system". The heating and ventilating equipments are separate and distinct from each other. It includes a double fan system for ventilating and supplying air at proper temperature, humidity and rate. Direct radiators are installed on separate piping for the initial heating and for preventing heat losses from windows and walls.

Two or more radiators should be placed under classroom windows. This will supply heat where the loss is

greatest. Wherever sufficient radiation surface can be had radiators should be of the wall type and bracketed five inches from the floor and three inches from the wall. This permits easy cleaning.

Ventilating construction should include individual ducts from the fan chamber to each classroom flue. Each duct should be equipped with automatically controlled mixing and volume dampers in the plenum chamber. The individual ducts with dampers provide for air at the temperature suited to the individual room.

The fresh air fan should be located in the basement and the exhaust fan at the roof. Fans should be electrically driven. Both motors and fans should be sound proof.

The temperature control should be that of automatic thermostats. These prevent fuel waste and add to comfort. They should be attached to both systems to prevent one system operating against the other.

5. Fire Protection—Buildings should be provided either with automatic sprinklers consisting of a series of cold water pipes under pressure with heads located in the proportion of one to one hundred square feet of floor area; or with a standpipe system. If the latter system is used, pipes should be arranged so that the farthest portion of the building is not more than seventy-five feet from the nearest hose outlet. A gravity tank should be located on the roof. The equipment should include a motor driven fire pump installed in the basement.

One fire extinguisher should be placed in the corridor between each two classrooms. The standard is one to each 1,000 square feet of floor area.

All electrical work in school buildings should be installed in accordance with the rules of the underwriters.

Where fireproof stairways are not provided, closed fire escapes of the circular winding slide type should be erected. Entrances should be on the side farthest from the building.

SUMMARY OF RECOMMENDATIONS

1. That a comprehensive future building program calling for four grade buildings be adopted. That three of these be located at or near the present sites of the Adams, Jefferson and Washington buildings and that a fourth site be chosen which shall be central with reference to the southeast quarter of the city.
2. That these buildings be planned to house grades below the seventh.

3. That one of two plans with reference to the development of the high school be adopted:
 - a. The ideal high school plant which provides a building large enough for and planned to accomodate both the junior and senior high schools.
 - b. An alternative plan which would continue the present high school building as a senior high school and which would provide for a junior high school building on the Lincoln site.
4. That the Adams and Jefferson buildings be remodelled sufficiently to provide sufficient light.
5. That blackboards be immediately adjusted to proper heights.
6. That new seats purchased be of the movable and adjustable combination seat and desk type.
7. That additional cupboard and filing cabinet facilities be provided.
8. That stairways be made safe.
9. That toilet room windows be enlarged and that individual stalls with doors be provided.
10. That toilet or adjoining rooms be provided with washing facilities.
11. That vacuum cleaning systems be provided.
12. That a supervisor of janitors be employed.
13. That buildings be fire water-piped and provided with fire gongs.

III TEACHERS AND SALARIES

THE TEACHERS.

The most important factor in a school system is a corps of active, well-prepared, trained and growing teachers. Good teaching is the fundamental basis of a good school system. All other phases of a school are merely accessories and aids to facilitate good and effective teaching. Splendid buildings and equipment, good textbooks and courses of study, good organization and well-kept records in and of themselves will not make successful schools. They are usually marks of and aids contributing to an efficient system of schools but first of all there must be a high grade of teaching.

A high grade of teaching is scarcely to be expected by a board of education which does not pay salaries high enough to purchase a first-class quality of instruction. A board of education no less than any other class of employers gets approximately what it pays for and pays for what it gets. Janesville should have sufficient pride in its schools to be satisfied with none but the best when it goes into the market for teachers. In order to secure a high grade of teaching the board should follow two guiding principles with respect to its teaching body:

1. Establish a high standard of qualification.
2. Insist upon continuous growth on the part of its teachers.

The first of these is to be attained by setting a standard requiring normal or college graduation with specific training in the application of teaching methods and a minimum of successful experience. In the case of local teachers at least two years of successful teaching elsewhere should be required.

The second of these principles is to be attained through the training of teachers in service.

The most effective means of training teachers in service are (1) efficient supervision and (2) additional preparation on the part of teachers.

To accomplish these conditions it will be necessary for the board to (1) pay a salary sufficient to attract well-prepared

teachers regardless of residence; (2) to pay salaries that will encourage teachers to continue their own preparation, and (3) to provide for sufficient high grade supervision.

TABLE 3.—*Preparation of Teachers*

	Kinder- garten	Elemen- tary	Special		High School	Total
			Elem.	H. S.		
1. Part high school.....		1			1	2
2. High School.....		14				14
3. Part normal.....		1		1		2
4. Normal.....	5	22	2	5		34
5. Advanced Normal.....		1	1			2
6. Part College.....		3		1	2	6
7. College.....		2		1	4	7
8. Advanced College.....					7	7
Total.....	5	44	3	8	14	74

Table 3 represents a summary of the preparation of teachers in Janesville. Teachers have been classified with reference to the amount of preparation they have had. Teachers who have had only a four year high school preparation or less are listed under "High School" or "Part High School" respectively. Those who have completed a full normal school course are listed as "Normal". "Part Normal" indicates less than a full course and "Advanced Normal" indicates a year or more of special preparation beyond that required for graduation. Under the heading "Part College" are those who have had some college training but less than a complete course. Teachers who have had considerable work toward advanced college degrees are listed as "Advanced College".

It would seem highly desirable that grade teachers in cities such as Janesville should have at least full normal school training. High-school teachers should have sufficient additional preparation to make them college graduates. Approximately one-fourth of the Janesville teachers fall short of this requirement. The survey staff does not wish to convey the impression that all of these teachers are poor teachers. Neither does it wish to appear to endorse the work of all who have had a normal school education or more. The teachers referred to above are all teachers of experience. Many of them have given the best years of their lives to the service of the Janesville schools. Among

these who are not normal or college graduates none have had less than seven years of experience. Only three have had less than twenty. Experience, however, is not the only prerequisite to good teaching. Teachers must have a sufficient scholastic foundation at the beginning. This must be supplemented by adequate supervision and additional preparation at not infrequent intervals, if good teaching is to be expected. In many cases the work being done by these teachers is not of as high a quality as could be desired. Some of these teachers are capable of doing better work than they are now doing. The work of the teachers as a whole could be improved by closer supervision and through additional study on the part of the teachers themselves.

Even if the building principals may be assumed to be familiar with grade work they are not to be regarded as supervisors of instruction. Their entire time is devoted to teaching and other duties of an administrative character. The supervision of the entire corps of seventy-four elementary and high-school teachers is left to the superintendent. This is expecting more than any one person can accomplish, no matter how competent he may be. It is especially true in view of the other duties he must perform as chief executive officer of the schools. In the judgment of the members of the survey a grade supervisor should be employed to assist the superintendent. This can be done without additional cost of any consequence. A sufficient amount of money to employ a high grade supervisor may be found by decreasing the present number of kindergarten teachers. There are at present five kindergarten teachers and five assistants. It is recommended that these be reduced to three each.¹ The kindergartens are in session for a half day only. During a part of the remaining half day the kindergarten teachers are engaged in telling stories to children of the primary grades. This is an expensive luxury. The present arrangement should be discontinued and the work of story-telling conducted by the regular teachers.

More supervision is not, however, the sole need in Janesville. Supervision cannot bear its best fruit on sterile soil. It is the unanimous opinion of the survey staff that additional preparation in the way of further study is necessary on the part of the

¹ On the strength of the preliminary report of the survey this recommendation was adopted and placed in effect in September, 1917.

present corps. As stated above the most important essential in any group of teachers is continuous professional growth. This condition can only be brought about by further and systematic study on the part of the teachers. They should be encouraged and in some cases be required to attend summer schools of an approved character. A few teachers were found to be taking extension or correspondence courses bearing upon their schoolroom work. This should be encouraged. Entirely too few teachers have been in the habit of attending summer sessions at either normal schools or universities.

We noted in Table 3 that fifteen of the elementary teachers had no more than a high school preparation. Only four of these have attended a summer school within the last five years. Six have never attended even a normal or university summer session. Of the twenty-eight normal school graduates teaching in the grades, eighteen were graduated more than five years ago, but only two of these eighteen have attended a summer session within the past five years. Fifteen of the eighteen have never attended a summer session since graduation. One of the ten who completed normal school courses within the past five years has attended a summer session. These figures speak for themselves. Even normal school graduation has not proved a guarantee against professional lethargy. No matter how thorough a normal school course may be no teacher can keep abreast of modern educational progress unless she makes some effort to continue her preparation.

The board should realize that teachers cannot remain professionally alive and grow under such lax efforts of self-improvement. It is evident that many Janesville teachers have either been financially unable to continue their preparation or have felt that further preparation was unnecessary. The survey staff is convinced that in view of the present high cost of living many teachers cannot at their present salaries make the necessary financial sacrifice to secure further training. The first relief must come through the provision of adequate pay by the board. The board should then set up definite requirements regarding summer school or extension courses. Teachers who are not normal or college graduates and who desire to be retained in the school should be required to attend two summer schools within the next three years. Nor is it alone necessary that those who

are not normal or college graduates should attend summer school. Far from developing within students a thirst for additional study, college or normal graduation too frequently leaves them with a feeling that their education is sufficient and that further efforts in that direction are unnecessary. It is recommended that teachers who have not graduated from a normal school or college within the past five years and who desire to be retained be given the option of attending summer school either during the coming summer or the one following. No teacher should permit herself or be permitted by the board to continue in service if she has not attended a summer school within the last five years. The obligation of the board is to pay such salaries as will command a high degree of initial preparation and encourage further preparation when once employed, and to purchase a sufficient quantity of high grade supervision.

SALARIES

Schools cannot hope to secure a high grade of teaching service without paying reasonable salaries. The present scale of salaries for teachers in Janesville as in many other cities is entirely inadequate to command a high quality of teaching. This does not mean that the immediate remedy is to be found in a blanket raise in salaries for the present corps. It does mean that a schedule must be adopted which is sufficiently high to attract good teachers to the system and the benefits of which may be offered to teachers in the present corps as an inducement to them to improve their preparation.

The Cost of Living

The teachers were asked to report their expenditures for various items. The median or middle expenditure for each item for both elementary and high-school teachers may be seen in the following table. This means that one-half of the teachers spend less than the amount opposite each item and the other half spend more.

TABLE 4.—*Median Annual Expenditures for Each Item Reported by Teachers*

	Grades	High School
Board and room.....	\$301.56	\$350.00
Clothing.....	131.67	198.33
Laundry.....	15.83	38.33
Church, entertainment and philanthropy	30.00	47.50
Professional books and magazines.....	4.33	5.67
Teachers' associations.....	17.69	17.22
Travelling expenses.....	3.62	30.00
Dental and medical services	10.62	22.50
Toilet articles.....	5.40	10.17
Gifts.....	26.67	30.00
Pensions.....	6.83	10.50
Miscellaneous.....	55.00	85.00
Total.....	\$609.22	\$845.22

The total of the medians for the various items is \$609.22 for grade teachers and \$845.22 for high-school teachers. When the total expenditures by all teachers were taken the median living expense was found to be \$687.50. High-school teachers spend more than grade teachers. The higher salary received by a high-school teacher evidently enables her to live somewhat better than the average elementary teacher. She receives a median salary of \$950 while the median salary of grade teachers is only \$625. Doubtless a considerable part of the higher cost of living for high-school teachers is to be explained by the fact that very few of them are local teachers. Approximately three-fourths of the grade teachers are local teachers for whom the cost of board and room, laundry, and traveling expenses may be expected to be lower. This fact may also account for some of the difference in the amount expended for clothing. Another factor accounting for the higher cost of living for high-school teachers in Janesville is the fact that the high school group includes married teachers with families.

With a median expenditure for elementary teachers of \$609 and a minimum salary much less than this it is quite evident that some teachers received less than a living wage during the past year. Under such conditions the schools cannot hope to attract the most ambitious teachers.

In order to distinguish between expenditures by those who live at home and those who do not, teachers were asked to indicate in each case. They were then divided into four groups, (1) those

who live at home both during the school term and during vacation, (2) those who live at home during the year but not during vacation, (3) those who live away for the entire year, (4) those who live away during the school year but are at home for the summer months. The median annual expenditure for each group is given below.

At home all year	Not at home all year	At home in school year but not summer	At homesummer only
643	825	600	625

These figures show a decidedly higher figure for teachers who are not at home for any part of the year. This group is made up chiefly of high-school teachers.

It may appear surprising that the second largest expenditure is made by those who live at home entirely. This may be explained by the fact that many of them have established their own homes and frequently have one or more persons dependent in part at least upon them. When teachers live at home it does not mean that they receive board and room gratis.

It should not be necessary to call attention to the increases during late years in the cost of living which are apparent to any observer. The median expense reported by all Janesville teachers for a single item, board and room for the year 1912-13 was \$264 and for 1916-17, \$317. This represents a 20% increase for the five year period. During the same time the median salary reported by teachers increased 18%. Even during a period of prosperity salaries have not increased in proportion to the increased cost of board and room.

The effect of paying salaries which represent less than a living wage is three-fold: (1) Ambitious young men and women are not attracted to the teaching profession; (2) There is a tendency to select an undue proportion of local teachers resulting in what is commonly called "inbreeding"; (3) Teachers are not encouraged and can little afford to improve their training through summer school attendance or otherwise.

Salaries in Other Cities

Were the board to pay average salaries it would be doing none too well. However when the median salary of grade teachers is compared with those of teachers in 33 other cities in middle western states other than Wisconsin, it is found that two-thirds of them pay better than Janesville. In high school salaries it ranks somewhat nearer the average. The median salaries in each of these cities to the nearest five dollars may be seen from the table following:

TABLE 5.—*Median Salaries of Elementary and High-School Teachers in 34 Cities Showing Rank of Each City.**

Cities	Elementary		High School	
	Rank	Median	Rank	Median
Topeka, Kan.....	1	\$800	3½	\$1,125
Hammond, Ind.....	2	855	3½	1,125
Lincoln, Neb.....	3	820	8½	1,055
Ann Arbor, Mich.....	4	805	16½	1,015
Richmond, Ind.....	5	800	10½	1,050
Virginia, Minn.....	6	785	1	1,285
Jackson, Mich.....	7	780	6	1,100
Davenport, Iowa.....	8	775	5	1,225
Waukegan, Ill.....	9	745	2	1,110
Battle Creek, Mich.....	10	730	14	1,030
Burlington, Iowa.....	11	715	10½	1,050
Dubuque, Iowa.....	12	710	16½	1,015
Freeport, Ill.....	13	700	12½	1,025
Council Bluffs, Iowa.....	14	695	21	920
Decatur, Ill.....	16	690	15	1,020
Rockford, Ill.....	16	690	8½	1,055
Elkhart, Ind.....	16	690	23	905
Elgin, Ill.....	18	685	18	985
Winona, Minn.....	19	670	19	955
Ironwood, Mich.....	20	665	12½	1,035
Muskegon, Mich.....	21	655	7	1,060
St. Cloud, Minn.....	22	630	26	865
Janesville, Wis.....	23	625	20	950
Red Wing, Minn.....	24½	605	24	895
Grand Island, Nebr.....	24½	605	22	915
Lawrence, Kansas.....	26	600	29½	815
Mankato, Minn.....	27	590	29½	815
Coffeyville, Kan.....	28	585	28	835
Fremont, Nebr.....	29	580	25	885
Stillwater, Minn.....	30	565	31	800
Beatrice, Neb.....	31	560	33½	775
York, Nebr.....	32	555	32	790
Kearney, Nebr.....	33	545	33½	775
Pittsburg, Kan.....	34	520	27	850

* From data reported by superintendents in these cities April, 1917.

TABLE 6.—Median Salaries of Elementary and High-School Teachers in 17 Wisconsin Cities Showing Rank of Each City.*

Cities	Elementary		High School	
	Rank	Median	Rank	Median
Superior.....	1	\$750	1	\$1,065
Madison.....	2	715	3	1,010
Kenosha.....	3	705	4	965
La Crosse.....	4 ¹	685	2	1,020
Racine.....	4 ¹	685	7	940
Manitowoc.....	6	640	5 ¹	950
Janesville.....	8	625	5 ¹	950
Ashland.....	8	625	12	890
Oshkosh.....	8	625	8	920
Wausau.....	10	605	13	875
Sheboygan.....	11	600	11	895
Waukesha.....	12	595	9	915
Chippewa Falls.....	13	575	10	910
Stevens Point.....	14	565	17	810
Green Bay.....	15	560	14 ¹	850
Beloit.....	16	555	14 ¹	850
Marinette.....	17	530	16	845

* From data reported by superintendents in these cities April, 1917.

How teaching salaries in Janesville compare with other cities in Wisconsin may be observed in Table 6. Among these 17 cities it occupies a middle ground in the matter of elementary teachers' salaries and takes rank with the upper third for salaries of high-school teachers. Salaries in Wisconsin as typified by these cities are however on the whole lower than in neighboring states. This may be seen by comparing Tables 5 and 6. A more detailed consideration of the subject of salaries will be found in the chapter on Finance.

CONCLUSIONS AND RECOMMENDATIONS ON TEACHERS AND SALARIES

General.

1. The board of education should employ such number of teachers as good business policy demands.

2. The board ought to be able to go wherever and to pay whatever is necessary to secure good teachers.

3. If a teacher is to be retained at all, she should show a growth in ability which the board should consider as possessing a cash value.

4. It is expected that every teacher in the employ of the board shall do something to improve her qualifications while in the service of the board.

5. Many of the present teachers are only high school graduates. The survey staff is of the opinion that this is wrong policy. Teachers who are thus lacking in preparation should either show that such lack has not affected the teaching or be expected to make up this deficiency.

6. Careful estimates place the minimum cost of living at \$600. Unless there are peculiar circumstances, no teacher should receive less and retain her position.

7. The present number of kindergarten teachers should be reduced. With the present half-day schedules, three kindergarteners and three assistant kindergarteners would be sufficient. While kindergarteners at present spend a portion of the day in telling stories to children of the primary grades, such arrangement should be discontinued, and the work done by the primary teachers. The change here recommended would affect a saving at the present salary rates of approximately \$1600.

8. The saving effected by reducing the number of kindergarteners should be devoted to the payment of the salary of a grade supervisor.

Salary Schedule.

1. That a distinction be made between regular and probationary teachers. That in order to become regular teachers, probationary teachers shall have taught successfully at least one year in the Janesville schools.

High-School Teachers

1. That the minimum salary for regular teachers be \$850.
2. That an annual increase of \$50 be given to successful teachers up to \$1000. Further increases shall be conditioned on superior merit.
3. That for the present at least no fixed maximum be established for high-school teachers.

Elementary Teachers

1. That teachers be engaged on probation for one year at a salary not less than \$600. (Cheaper teachers may be had but in the judgment of the survey staff, teachers worth less than \$600 should not be employed.)
2. That the minimum salary for regular teachers be \$650.
3. That an annual increase of \$25 be added each year to the salaries of successful teachers. (Teachers not deserving an increase of \$25 should not be retained.)¹
4. That teachers who attend a six weeks' session of an approved summer school and whose course shall be approved by the superin-

¹ Adopted by the board and placed in effect September, 1917.

tendent shall receive an additional annual increment of \$50 beginning with the year of such attendance; provided that no teacher shall receive more than two \$50 increments.¹

5. That the present maximum salary be raised to \$850.
6. That teachers of unusual merit may with the approval of the superintendent be given an additional increase of \$50 beyond the maximum of \$850.

Elementary Principals

1. That principals be subject to the same salary provisions as elementary teachers, and that in addition each be allowed a certain amount for administrative duties as follows: Principals of the Adams, Jefferson and Washington buildings \$100 each; principals of the Douglas, Garfield, Grant, Lincoln, and Webster buildings \$75 each.

¹ Adopted by the board and placed in effect September, 1917.

IV FINANCING THE SCHOOL SYSTEM

It is proposed to offer in this chapter some material upon the financial management of the public schools of Janesville, and to classify it under three principal headings: First, the problem which the educational authorities of the city have to face; Second, the means which they have of doing it; Third, the manner in which it is being done. A fourth heading might logically be added although it will not be specifically separated from the other three. Such a heading would have to do with suggestions for a better means of financing the public schools.

1. THE EDUCATIONAL PROBLEM AT JANESVILLE.

The work to be done by a city school system may be variously estimated. A rough measure of it may be obtained by considering the number of persons who are to receive benefit from it. This would mean, broadly speaking, the entire population of the city in question, for there is no doubt but that the influence of the public schools directly and indirectly affects all the people. Indeed, it is part of the modern movement in education to provide means by which the public schools may exercise directly rather than indirectly, their influence upon adults as well as children. The population of the city of Janesville is practically stationary at about 14,000 persons. The following are the estimates of the Census Bureau for each year of the past five years:

1912.....	14,051
1913.....	14,123
1914.....	14,195
1915.....	14,267
1916.....	14,339

Obviously, however, the problem, educationally, at Janesville, is more specifically determined not by the population of the city, but by the number of persons of school age. It is well-known that the ratio of children to total population is not the same in different localities. Some recent school surveys have especially

emphasized this fact. For example, at Portland, Oregon, the percentage of the population between the ages of five and fifteen is but twelve, while at Salt Lake City it is between eighteen and nineteen. Clearly, the educational problem of a city in which eighteen or nineteen out of every hundred people are of school age, is larger than that of a city in which the proportion is only twelve out of each one hundred. The census ages in Wisconsin are from four to twenty. The number of persons at Janesville between those ages is about 3,800. Clearly, however, not all persons between the ages of four and twenty are enrolled in the public schools. Few children enter the kindergarten at four, and large numbers of children drop out of school at the age of fourteen or fifteen. The normal age for graduation from the high school is but eighteen. The United States Census Bureau reports the number of persons in each city between the ages of six and fifteen years. In 1910 there were 1,994 persons between these ages in Janesville, and, since the population is practically stationary, this is probably about the number at present. These age limits, while they correspond rather closely to the normal age limits for children in the elementary school, do not include most of the pupils in the high school. Moreover, among the two thousand or more children between the ages of six and fifteen, a rather large number are attending parochial schools. During the year 1916-17 the enrollment in the three parochial schools at Janesville was 503. While from the broad and civic point of view the problem in public education is set by the number of children of school age in the community, from another point of view the problem is really to be stated in terms of the number of children actually enrolled in or attending the public schools. Of course, enrollment and attendance figures do not indicate the extent to which those who ought to be attending school are doing so. It is reasonable, however, to assume that the number of children evading the compulsory education law is small in a city of the character of Janesville.

The following table shows the number of days school has been in session during each of the past five years together with the enrollment and the average daily attendance in each of these years, distributed according to types of schools.

TABLE 7.—*Enrollment & Attendance*

Year	Number of days schools were in session	Net Enrollment				Average Daily Attendance		
		Total	Kindergarten	Elementary	High school	Total	Elementary and kindergarten	High school
1912-13...	190	2567	243	1899	425	2067	1693	374
1913-14...	184	2517	279	1794	444	2099	1727	372
1914-15...	186	2470	271	1726	473	2068	1638	430
1915-16...	186	2298	285	1511	502	1964	1516	448
1916-17...	186	2540	274	1496	570	1914	1428	486

Source of data: City Superintendents' reports to State Department of Public Instruction, except that figures for 1912-13 are from principals' reports to the city superintendents.

From this table it is evident that the total number of different children who were at any time enrolled during the year has amounted to about 2500 a year. Janesville, therefore, has not before it the problem of keeping up with a rapidly increasing school population. In this its situation is quite different from that of many other cities of the country, whose task is not only to maintain adequate educational opportunities for their school children; but also to expand their systems to meet increasing populations.

Observe that in Table 7 the figures for elementary schools are decreasing, while those for the high school are increasing. As part of our problem, therefore, we must recognize the fact that the city is being called upon to finance a growing high school. From Table 7 it may be shown that, based on the enrollment, more than 22% of the children were in high school in 1916-17 while there were but 16% five years before.

It may be interesting to compare the proportion of high school pupils at Janesville with the proportion in other cities. Among twenty-three cities in middle western states whose population is between 10,000 and 25,000 the percentages of high school enrollment on total public school enrollment were found to range between 6.1 and 27.4. Probably there is some special reason for these extremes. It is not likely that a city has but six out of each hundred public school children in its high school, unless there is present some force tending to draw away from the public high school the children who would otherwise attend it.

There may be a technical school in the community, or a normal school offering work for elementary school graduates; or there may be a strong competitor to the high school in the form of a private academy. On the other hand, a city at the other extreme—a city showing a surpassing proportion of high school pupils—may be equally exceptionally situated. It may, for example, be the only high school within an area much larger than the district which supports it, and may, therefore, have an unusually large number of non-resident pupils.

Among the cities which do not show extreme conditions, however, we may find the prevailing or normal figures. Half the middle western cities of the population class of Janesville have proportions of high school pupils ranging from about 15% to 22.5%—at least that appears to have been the situation in 1914-15, according to the report of the Commissioner of Education. In that year, the corresponding figure for Janesville was 19%. It may, therefore, be inferred that the proportion of children at Janesville who remain in school long enough to become enrolled in the high school is about the normal or typical proportion.

Speaking merely in terms of the persons to be benefited by the public schools, one may summarize by saying that at Janesville we have a stationary population of about 14,000; that the children of census age (four to twenty) are about 3,800, but that those of the ages six to fifteen are only about 2,000. Thus between fourteen and fifteen out of every 100 persons in the population are children of the ages six to fifteen. Of the number of children who would otherwise have to be provided for in the public schools, about 500 were enrolled in parochial schools last year (1916-17). Finally, the actual enrollment of the elementary schools is about 1,500, and is decreasing. The enrollment of the high school was 570 last year, and is increasing. The enrollment in kindergarten is slightly on the increase. On the whole, the enrollment is practically stationary when all schools are considered. Accordingly, the city is not confronted with the need of rapidly expanding its school system to accommodate increased enrollment.

II. THE MEANS FOR SOLVING THE PROBLEM; RESOURCES; RECEIPTS

Fundamentally, the basis for meeting the requirements of education at Janesville is the property valuation in the city. The full valuation of real and personal property at Janesville in 1916 was \$16,981,097. Since the estimated population of the city for that year was 14,339, the wealth per capita was \$1,184. Such a statement, however, conveys little meaning until we are able to compare it with similar statements about other cities of the same class as Janesville. Accordingly, I have shown in column 4 of Table 8 the wealth per capita for nine Wisconsin cities, including Janesville. These are the cities which, according to the 1910 census, had a population between 10,000 and 25,000.

I have used figures for true valuation rather than for assessed valuation, because the assessments vary from nearly a 100% basis to about 65% among these nine cities. The figures for true valuation were furnished by the Wisconsin Tax Commission and are based upon the reports of county assessors of income.

According to Table 8, the city having the largest wealth per person is Janesville which in the year in question (1916) had property amounting to \$1,184 per person. Kenosha is next with \$1,129 per capita, followed by Appleton and Manitowoc. The wealth of each of these four cities amounts to well over a thousand dollars for each "man, woman, and child" in the population.

A remark on the reliability of these figures may not be inappropriate. It is assumed, in the first place, that the figures for true valuation represent uniformly the resources of each city. The figures given for population are the United States Census Bureau's estimates for 1916 as contained in the "Estimates of Population of the United States," Bulletin 133, Bureau of the Census, page 30. These are estimates and not enumerations. The figures are, therefore, no more than approximations. However, the figures both for true valuation and for population are the best ones obtainable. The discrepancies between the reported and the true figures cannot be great, and I feel sure that the entries for "wealth per capita" contained in columns 4 and 5 are substantially accurate.

TABLE 8.—Assessed and True Value of Property (Real and Personal) and Wealth Per Capita, 1916

City	Property value (1)		Population (2)	Wealth per capita based on true valuation		Average daily attendance in public schools (4)	Wealth per pupil in average daily attendance	
	Assessed	True		Amount	Rank		Amount	Rank
Appleton.....	\$19,224,500	\$19,553,254	\$17,834	\$1,096.40	3	2,288	\$8,546.00	3
Ashland.....	7,164,354	7,636,874	11,594 (3)	653.69	9	1,961	3,894.38	9
Beloit.....	14,246,318	17,928,893	18,072	892.08	5	3,309	5,418.22	6
Fond du Lac.....	15,419,870	17,971,707	21,113	851.21	7	3,240	5,546.82	5
Janesville.....	15,609,631	16,981,097	14,339	1,184.26	1	1,964	8,646.18	2
Kenosha.....	34,197,805	35,663,065	31,576	1,129.44	2	3,709	9,615.27	1
Manitowoc.....	15,567,892	14,559,778	13,805	1,054.67	4	2,004	7,265.35	4
Marquette.....	9,174,130	9,739,498	14,610 (3)	666.63	8	2,388	4,078.52	8
Wausau.....	10,126,962	16,833,816	19,239	874.98	6	3,278	5,135.39	7

⁽¹⁾ Property values are taken from the reports of County Assessors of Incomes.^(*) Estimates made by the Bureau of the Census as of July 1, 1916.^(*) Population April 15, 1910; decrease since 1900; no estimate by Census Bureau.⁽⁴⁾ City Superintendent's Report to the State Department of Instruction, 1916.

So far, therefore, as wealth per capita may be an indication of the ability of a city to finance its educational and other activities, we may say, with confidence, that Janesville has unusually large opportunities compared with other cities in Wisconsin of the same class. None of the cities possess more wealth per person than does Janesville. Not only do all of the cities possess less wealth per person, but some of them possess a great deal less; for example, the wealth per person at Ashland is but little more than half that at Janesville.

This does not by any means tell the whole story. It is proper to observe that the large wealth per capita at Janesville is no more significant in regard to schools than in regard to other municipal departments. So far as the schools are concerned, however, the wealth per pupil in average daily attendance has a special meaning. It indicates the amount of wealth back of every child who attends the public schools. It is manifestly affected by at least two important factors. The first is the proportion of persons of school age in the total population of the city in question,* and the second is the proportion of children of school age who are attending the public schools. Aside from the fact that there is difference among cities in the enforcement of the compulsory education law, there is also the effect of the existence of private and parochial schools in a community.

Columns 7 and 8 of Table 8 show that the position of Janesville is scarcely less favorable in respect to wealth per pupil than in respect to wealth per capita of the population. Its wealth per pupil, amounting to \$8,646, was exceeded by that of but one city of the list. Not only did seven of the eight other cities have less wealth for each child, but two of them had less than half as much. Whatever Janesville may or may not choose to do educationally, it is not in a position to plead poverty. For example, it has more wealth and fewer public school children than either Marinette or Manitowoc. It provides education for practically the same number of children as does Ashland, and has more than twice as much money with which to do it. With about the same wealth as Beloit, Fond du Lac, or Wausau, it teaches about 1300 fewer children.

* It is surprising how great the variation is in this respect. The Bureau of the Census reported in 1910 the number of children in each city who were between the ages of six and fifteen. The percentage of such children varied among the 25 cities with which comparison is made elsewhere in this chapter from less than 10 to 21. Janesville's percentage was 14.4.

The foregoing table and discussion have to do with what the city resources are in a large way. More significant, with reference to the schools, is the question of the amount of money at the disposal of the Board of Education. Table 9 shows the school receipts for the past five years. The revenue receipts and the nonrevenue receipts are shown separately. It is the former, of course, which are most significant in this connection; not only because they constitute the bulk of the money available for school purposes, but also because the nonrevenue receipts represent corresponding liabilities rather than unencumbered funds available for use. Receipts from loans or bond sales must be offset at other times by revenue receipts for their payment, while "refunds of payments" have no doubt been offset by excess payments which at the time they were made must have corresponded to an equal amount of revenue receipts.

TABLE 9.—*Receipts. Janesville Schools*

	1912-13	1913-14	1914-15	1915-16	1916-17
Subventions and grants from State..	\$11,495	\$12,104	\$12,666	\$13,723	\$13,661
Subventions and grants from county	10,753	10,356	10,905	11,328	10,899
Appropriations from city treasury...	44,000	45,000	44,000	48,000	53,000
Rent and interest.....	542	1,612	2,973	3,530	1,050
Tuitions and other fees	1,108	1,682	1,183	3,489	3,845
Other revenue receipts.....	854				778
Total revenue	\$68,752	\$70,754	\$71,727	\$80,070	\$83,233
Temporary loans	\$13,000	\$10,000	\$10,000	\$20,800	\$21,100
Other loans and bond sales.....			9,019		
Refunds of payments			2,300		46
Total non-revenue	\$13,000	\$10,000	\$21,319	\$20,800	\$21,146
Grand total	\$81,752	\$80,754	\$93,046	\$100,870	\$104,379

From Table 9 it appears that the total revenue receipts for school purposes at Janesville have increased from \$68,752 in 1912-13 to \$83,233 in 1916-17 or 21%. The table also shows the sources of this revenue. The entries for 1916-17 will show, in a general way, the relation of the amount derived from each of the various sources to the total revenue. By converting these entries into percentages, we find that the grants from the State amounted in that year to 16% of the total revenue, that the proceeds from the county tax—which, however, is levied upon the city—amounted to 13%, and that the appropriations from

the city treasury amounted to 64%. Receipts from rent and interest in 1916-17 amounted to 1% of the total receipts; receipts from tuitions and other fees to 5%; while other revenue receipts amounted to 1%. Since the county tax is levied upon the city only—i. e., is based upon the same property valuation as is the city assessment—it is, for every practical purpose, a city levy. Thus, the amount raised on city property for school purposes was \$63,899 in 1916-17. This amounted to 77% of the total revenue for that year.

The principal sources of school revenue are, therefore, those from the state and those from city taxation. People in Janesville will no doubt be interested to know how receipts from these sources compare with receipts from similar sources for other cities of the same population class.

Table 10 shows for 21 cities out of 25 which have been selected for various purposes of comparison in this chapter the total revenue receipts for school purposes, and a division of these receipts into those from the state, those from the city and county combined, and those from other sources. It also shows the receipts per pupil enrolled (a) from city and county combined and (b) from all sources. The data are for the year 1914-15—the last for which the figures are available. The 25 cities are all in the population class of Janesville, and they are all in the Middle West. The fact that returns from these cities have been used in other chapters of this report was a factor in their selection.

The receipts per pupil from county and city combined ranged from a maximum of \$60.94 to a minimum of \$16.82. Janesville's amount was \$21.81, and only two cities had smaller amounts. The middle of the range—i. e., the median amount, was \$30.57. Accordingly, we may say that typically these 20 cities raised and appropriated for school use nearly nine dollars per pupil (or 40%) more than did Janesville. To equal this, Janesville would have been obliged to appropriate \$76,900 instead of the \$54,905 which it did appropriate. Moreover, in doing so it would still have been surpassed by half of the cities. In order to take a commanding position, it would have been obliged to appropriate about \$100,000. Such an appropriation would have amounted to \$39.73 per child, and would have barely placed Janesville among the first quarter of the 20 cities.

TABLE 10.—Revenue Receipts of 21 School Systems, 1914-15

City	Subven- tions and grants from state	Receipts from city and county tax levies (1)	Other receipts	Total enrollment	Receipts per Pupil Enrolled in Public Schools			
					From city and county		Total Receipts	
					Amount	Rank	Amount	Rank
	1	2	3	4	5	6	7	8
Appleton, Wis.....	\$21,081	\$114,109	\$1,509	\$136,699	2,640	\$43.22	2	\$51.78
Ashtland, Wis.....	16,461	52,326	3,087	71,874	2,190	23.89	16	32.82
Beloit, Wis.....	13,494	103,745	4,401	124,640	3,864	27.63	14	32.26
Kenosha, Wis.....	22,595	149,505	8,437	180,537	3,635	41.13	4	49.67
Fond du Lac, Wis.....	19,405	79,753	3,189	102,327	3,512	22.71	17	29.14
Janesville, Wis.....	12,666	54,905	4,156	71,727	2,517	21.81	18	28.50
Manitowoc, Wis.....	15,698	77,767	3,183	96,648	2,310	33.67	9	41.64
Marquette, Wis.....	18,537	47,197	290	68,024	2,808	16.82	20	23.53
Wausau, Wis.....	19,188	77,716	3,255	100,159	3,820	20.34	19	26.22
Corfeyville, Kan.....	3,000	93,000	800	98,800	3,524	23.39	15	27.47
Lawrence, Kan.....	3,995	80,304	7,518	91,806	2,643	30.38	12	34.74
Richmond, Ind.....	25,421	152,286	7,288	184,985	4,292	35.48	8	43.10
Muskegon, Mich.....	49,713	151,459	3,251	204,423	4,833	30.70	10	41.44
Ann Arbor, Mich.....	26,270	106,913	3,838	137,121	2,837	37.69	5	48.53
Ironwood, Mich.....	20,820	107,941	6,053	143,817	3,003	35.94	7	47.89
Waukegan, Ill.....	8,191	77,985	100	86,276	no data	no data	.....	no data
Freeport, Ill.....	3,904	129,019	4,429	137,352	3,032	42.55	3	45.30
Virginia, Minn.....	20,536	190,493	108,371	319,333	3,125	60.94	1	102.19
Winona, Minn.....	16,256	92,543	11,662	120,466	3,125	36.65	6	47.71
Mankato, Minn.....	12,851	52,607	2,325	67,783	1,729	39.20	11	36.20
Stillwater, Minn.....	11,542	42,118	139	53,799	1,431	29.43	13	37.60
MEDIANS.....						30.57		40.32

¹ In Wisconsin both city and county receipts are levied on the city property. The entries under this caption are the same for all cities in that they represent all receipts from taxation except those coming from the State.

Among the nine Wisconsin cities listed in Table 10 the rank of Janesville was seventh in the amount appropriated per child. In other words, two of the cities made less money available and six made more available in relation to the number of children to be educated at public expense. Indeed, two of the Wisconsin cities, namely Appleton and Kenosha, each made nearly twice as much available per child. To have equaled them, it would have been necessary for Janesville to appropriate more than \$100,000 instead of \$54,905.

In Column 8 of Table 10 are shown the total receipts from all sources per pupil enrolled in the public schools. Roughly speaking, these entries indicate for each city the amount of money behind every school child. Janesville ranked seventeenth out of the twenty cities. The amount per child was \$28.50. The largest amount for any city was \$102.19 per child; the smallest was \$23.53. The median or most typical amount was \$40.32. If the Janesville Board of Education had received that much per child, the city would have been obliged to appropriate (State grants and "other receipts" remaining the same) \$106,000 instead of \$54,905.

Table 11 is designed to show for the 21 cities we have selected, the proportions of total school receipts which are derived from state grants, local taxation, and other sources (such as rents and interest, tuition and other fees from patrons). The entries in this table, obviously, have nothing to do with the *amounts* of the receipts from any of these sources. Virginia, Minnesota, which in virtue of appropriating \$190,426 from local taxes, ranked first both in the total amount and in the amount for each school child from this source, nevertheless, because of large receipts from other sources, derived only 59.7% of its educational receipts from local taxation. This was a lower per cent than for any other city of the list. The table, however, is useful in showing the relative importance of the sources of receipts. Most typically, receipts from the state amounted to 16 or 17 per cent; and the figure for Janesville was 17.7. Among the nine Wisconsin cities the variation was from 22.9% (Ashland) to 10.8% (Beloit), and Janesville was the middle city.

In respect to the proportion of receipts from local taxation, the median for the 21 cities was 78.0%. Janesville's percentage was 76.5, and it ranked 17th among these cities. Among the

nine Wisconsin cities, it was seventh. These facts indicate that it was providing from its city taxation for a relatively small proportion of its total school receipts.

TABLE 11.—*Proportion of Revenue Receipts for School Purposes from State, County, and City—21 Cities—1914-15*

Cities	Subventions and grants from state	Receipts from local tax (city and county)	Other sources	Rank in appropriations from local tax
	1	2	3	4
Coffeyville, Kan.....	3.1	96.1	0.8	1
Freeport, Ill.....	2.8	94.0	3.2	2
Waukegan, Ill.....	9.5	90.4	0.1	3
Lawrence, Kan.....	4.3	87.3	8.2	4
Beloit, Wis.....	10.8	85.7	3.5	5
Appleton, Wis.....	15.4	83.5	1.1	6
Kenosha, Wis.....	12.5	82.8	4.7	7
Richmond, Ind.....	13.8	82.3	3.9	8
Manitowoc, Wis.....	16.2	80.5	3.3	9
Stillwater, Minn.....	21.4	78.3	0.3	10
Ann Arbor, Mich.....	19.2	78.0	2.8	11
Fond du Lac, Wis.....	19.0	77.9	3.1	12
Mankato, Minn.....	19.0	77.6+	3.4	13
Wausau, Wis.....	19.2	77.6-	3.2	14
Winona, Minn.....	13.5	76.8	9.7	15
Janesville, Wis.....	17.7	76.5	5.8	16
Ironwood, Mich.....	20.7	75.1	4.2	17
Muskegon, Mich.....	24.3	74.1	1.6	18
Ashland, Wis.....	22.9	72.8	4.3	19
Marinette, Wis.....	28.1	71.5	0.4	20
Virginia, Minn.....	6.4	59.7	33.9	21
Medians	16.2	78.0	3.3	

Summarizing conditions as they were in 1914-15,—the latest year for which comparative data are available—we may say:

(1) That in point of total revenue receipts (Table 10, Column 4), the \$71,727 provided for the Janesville schools was less than was provided by any Wisconsin city except one, and that only three cities of the entire twenty-one showed smaller amounts;

(2) That the \$54,905 provided from the taxation of city property for school purposes was exceeded by the appropriations of all but two of the Wisconsin cities (Table 10, column 2);

(3) That the amount provided by local tax when taken in connection with the number of pupils enrolled in the public schools was likewise low, being exceeded in six of the nine Wisconsin cities, and in all of the cities in the other states (Table 10, column 6);

(4) That in order to provide total receipts per pupil equal

to those most typically provided for schools in the other cities, \$40.32, Janesville would have been obliged to raise nearly twice as much from city taxation;

(5) That among the nine Wisconsin cities as well as among the entire 21 cities, it ranked relatively low in the proportion of its school receipts provided from local taxation (Table 11, column 2).

III. THE WAY IN WHICH THE PROBLEM IS BEING SOLVED

In this section an account will be given of the way in which the schools at Janesville are actually being financed. We have considered above the educational problem which confronts the citizens of that city, and the means at hand for solving it. This section will deal primarily with expenditures.

Taxes and Tax Rates

Table 12 shows for each of the nine Wisconsin cities classified by the Census Bureau as having populations in 1910 between 10,000 and 25,000 the total tax and the state, county, city, and school taxes, (levy of 1916) with the corresponding tax rates based on full property valuation. Four of the cities raised a larger State tax than Janesville; all of them raised a larger county tax, three a larger city tax, and six a larger school tax. All but two of the cities raised a larger total property tax.

A better comparison, however, may be made on the basis of the tax rates. It is to be understood that these are not the actual rates as they were used in levying the taxes, because the levy was upon assessed valuation. These rates are based on the full valuation as furnished by the Wisconsin Tax Commission from the reports of county assessors of incomes. The total tax rate for Janesville in 1916 was \$1.42 per \$100 of full property valuation. This was a lower rate than obtained in any of the other cities. A glance at the rates for state, county, city, and school taxes will show which of them are effective in determining the low rate of total taxes. As to the State tax, the difference between the cities was very small, the variation being from about thirteen and one-half cents (Janesville, \$.134) to about fourteen and one-half cents (Ashland, \$.146). The rates for county taxes varied a great deal, and Janesville's rate was the lowest among these cities. The rate for the city taxes at Janesville

TABLE 12.—City and School Tax Levies and Rates for Nine Wisconsin Cities. Levy of 1916

City	True prop- erty valua- tion real and personal	State taxes		County taxes		City taxes		School taxes		Total property taxes	
		Amount	Rate per \$100	Amount	Rate per \$100	Amount	Rate per \$100	Amount	Rate per \$100	Amount	Rate per \$100
	1	2	3	4	5	6	7	8	9	10	11
Appleton.....	\$19,553,254	\$27,221	.139	\$59,272	.303	\$187,227	.958	\$120,553	.617	\$394,283	2.017
Ashland.....	7,636,874	11,114	.146	52,476	.687	50,875	.666	57,486	.753	171,951	2.252
Beloit.....	17,928,883	24,316	.136	21,660	.121	93,668	.522	138,805	.755	274,970	1.534
Fond du Lac.....	17,971,707	25,400	.142	31,754	.177	212,334	1.181	85,213	.474	354,800	1.974
Janesville.....	16,981,097	22,807	.134	20,344	.120	126,813	.747	70,898	.417	240,862	1.418
Kenosha.....	35,663,065	48,178	.135	57,337	.161	253,606	.711	188,200	.528	547,371	1.535
Marion.....	14,559,778	19,525	.134	26,843	.184	115,656	.794	86,671	.595	248,695	1.707
Marquette.....	9,739,498	13,188	.135	87,043	.880	109,758	1.127	55,604	.571	215,503	2.213
Wausau.....	16,833,316	22,630	.134	39,132	.232	165,350	.982	96,287	.572	323,899	1.920

(\$.747) was not far from the typical rate. The rate for school taxes (\$.417) was lower than was the case in any other of these cities. Wausau's rate of \$.572 was the most typical one, four of the city rates being higher and four lower. If this rate had prevailed at Janesville, the amount of money raised by tax for school purposes would have been \$97,132. The conclusion, therefore, is that, considering its wealth, Janesville was lightly taxed, and that this was true because the rates were low for county and school taxes.

Analysis of City Expenditures

A classification devised by the Wisconsin Tax Commission will now be used to show, both for Janesville and for the other eight Wisconsin cities of the same population class, the purposes for which city expenses are incurred. Table 13 shows the Janesville city expenditures for the year ending April 15, 1916. The headings with which we are chiefly concerned are (a) those included under Departmental expenditures (exclusive of "Municipal public service enterprises"*) and (b) "Payments to school treasurer". Items of secondary importance in this connection are payments on account of indebtedness (interest and principal), and "Payments to other civil divisions."**

The variation among cities in respect to this item seems to make it inadvisable to include it in a comparative showing. It includes expenditures for public utilities, such as city water or lighting systems. These are largely self-supporting.

** These payments are agency and trust payments, including, to quote the schedule of the Tax Commission: "State tax on general property, school district loans from state trust funds, county tax on property paid in cash, county tax on property paid by delinquent property rolls, income tax for state and county (30%), teachers' insurance and retirement fund, and special assessments paid to treasurers of incorporated drainage districts."

TABLE 13. EXPENDITURES OF THE CITY OF JANESVILLE FOR THE YEAR ENDING APRIL 15, 1916*

I. DEPARTMENTAL EXPENDITURES:	
A. General Government.....	\$17,457
B. Protection of Person & Property.....	34,777
C. Conservation of Health.....	5,662
D. Highways	64,273
E. Charities & Corrections.....	8
F. Education other than schools.....	4,781
G. Recreation	1,851
H. Municipal Public Service Enterprises.....	32,415
I. Unclassified	4,642
II. PAYMENTS ON ACCOUNT OF INDEBTEDNESS:	
J. Interest	10,576
K. Principal	42,835
III. AGENCY & TRUST PAYMENTS:	
L. Payments to other Civil Divisions.....	49,197
M. Payments to School Treasurer.....	90,498
TOTAL EXPENDITURES	\$358,972

From Table 13 it appears that the total expenditures of the the city of Janesville for the year ending April 15, 1916 were \$358,972. If, however, we consider only the items which I have just mentioned as of primary importance, i. e. if we exclude public service enterprises, indebtedness, and agency or trust payments to other civil divisions, the expenditure was \$223,949.

This being the most significant expenditure, and the one upon the basis of which comparison between cities may most properly be made, Table 14 represents for Janesville and the other Wisconsin cities of its class a comparison of expenditures under the item leading to this figure for Janesville. Interest charges are likewise shown. Clearly, no comparison can be made between the expenditures of the cities without reducing them to common terms. Accordingly, in Table 14 the city expenditures for different purposes are expressed in amounts per capita of the population.¹ Table 15 shows the rank of each city in the amount per capita spent for each purpose.

It is evident from Tables 14 and 15 that the amount of expenditure for each item when reduced to common terms was quite

* From report to Wisconsin Tax Commission.

¹ Population as estimated for July 1st, 1916, by the Bureau of the Census.

TABLE 14.—Per Capita Cost of City Expenditures for Various Purposes.*

City	General government	Protection of person and property	Conservation of health	Highways	Charities and corrections	Education other than schools	School purposes	Recreation	Unclassified	Total	Interest	Total
	1	2	3	4	5	6	7	8	9	10	11	12
Appleton.....	\$1.54	\$3.11	.57	5.94	.48	.20	9.96	.27	.20	22.27	1.42	23.69
Ashland.....	1.23	4.07	.63	2.63	.21	.03	5.90	.10	5.35	20.12	1.34	21.46
Beloit.....	2.49	2.86	.88	5.09	.04	.28	8.20	1.75	.26	21.83	.42	22.25
Fond du Lac.....	1.22	2.61	1.07	3.24	.49	.36	5.67	.60	.24	15.48	1.08	16.56
Janesville.....	1.22	2.43	.39	4.45	.....	.33	6.31	.13	.32	15.62	.74	16.36
Kenosha.....	.59	1.66	2.64	.85	1.99	1.02	7.26	.37	.04	15.92	.73	16.65
Marquette.....	.68	2.47	.33	3.08	.99	.30	12.12	.04	.06	20.37	.76	20.83
Manitowoc.....	1.22	2.68	2.26	4.53	.65	.31	5.86	.33	.09	17.93	1.16	19.09
Wausau.....	1.03	2.64	1.02	3.14	.49	.21	6.83	.07	.03	15.46	.74	16.20
All cities.....	1.25	2.71	1.29	3.43	.76	.43	7.88	.45	.54	18.78	.93	19.71

* Data from the most recent reports of the cities to the Wisconsin Tax Commission.

TABLE 15.—Rank of Cities in Expenditures Per Capita.

City	General government	Protection of person and property	Conservation of health	Highways	Charities and corrections	Education other than schools	School purposes	Recreation	Unclassified	Total	Interest	Total
	1	2	3	4	5	6	7	8	9	10	11	12
Appleton.....	2	2	7	1	6	8	2	5	5	1	1	1
Ashland.....	3	1	6	8	7	9	7	7	1	2	2	3
Beloit.....	1	3	5	2	8	6	3	1	3	3	9	2
Fond du Lac.....	5	6	3	5	4.5	2	9	2	4	8	4	7
Janesville.....	5	8	8	4	9	3	6	6	2	7	6.5	8
Kenosha.....	9	9	1	9	1	1	4	3	8	6	8	6
Marquette.....	8	7	9	7	2	5	1	9	7	4	5	4
Manitowoc.....	5	4	2	3	3	4	3	4	6	5	3	5
Wausau.....	7	5	4	6	4.5	7	5	8	9	9	6.5	9

different in different cities. Beloit spent \$2.49 per capita for general city government, while Kenosha spent but 59 cents for the same purpose. Janesville spent \$1.22 for this item and ranked fifth among the nine cities. In other words, it had a middle position. It spent \$2.43 for protection of person and property and only one of the nine cities spent less than this amount. Its expenditures for "conservation of health" and for "charities and corrections", were also low compared to those of the other cities. In fact, for the last item its entire expenditure amounted to but \$7.50 which on a per capita basis was *nil*. Its payments for "education other than schools" (i.e. for libraries) and its unclassified expenditures were relatively high. It spent 13 cents per capita for recreational purposes, which was rather low, being exceeded by the amounts for five of the other eight cities. Its expenditures for school purposes amounted to \$6.31 per capita, which was exceeded in five of the cities, three of them spending less for this item. The maximum expenditure per capita for school purposes was that of Marinette, being \$12.12, or nearly twice as much as at Janesville. Appleton's expenditure of \$9.96 per capita and Beloit's of \$8.20 were 58% and 30% respectively more than the expenditure of Janesville. Kenosha's expenditure of \$7.26 for school purposes was 15% more than that of Janesville, while Wausau's expenditure of \$6.83 was 8% more. The three cities whose expenditure for school purposes was exceeded by that of Janesville spent respectively 6%, 7% and 10% less than Janesville. It will, therefore be seen, first, that Janesville was exceeded by more than half of the other Wisconsin cities in its expenditure for school purposes; and second that the cities which spent more spent much more, while those which spent less spent only a little less. Accordingly, while the rank of Janesville was sixth among the nine cities in school expenditures, it really did not take as high a position as even that fact would apparently indicate. The per capita expenditure for school purposes for all the nine cities taken together amounted to \$7.88. If Janesville had spent this amount per capita, it would have spent \$112,991 for school purposes instead of \$90,489.

As to the expenditures for *all purposes* exhibited in Tables 14 and 15, Column 12, we observe that only one city spent less than Janesville, and that in that city the expenditure was only

slightly less. The amount per capita for all purposes* was \$16.36. In four of the other cities the expenditure was over \$20.00 per capita. It is evident that from the point of view of money expended for each person living in the city, the burden falls lightly on the citizens of Janesville.

Tables 16 and 17 indicate from another point of view—namely that of wealth—the expenditures for the same purposes exhibited in Tables 14 and 15. The figures in Table 16 are expressed in amounts per \$1,000 of wealth (full valuation of real and personal property). Table 17 shows the rank of the cities in expenditures for each of the different purposes in proportion to their wealth. In the first place, we may observe that the *total* expense in proportion to the wealth was much less at Janesville than at any other of the cities with which we are making comparisons. Thirteen dollars and eighteen cents (\$13.18) per \$1,000 of wealth paid all the city expenditures for the year, or, if interest payments on indebtedness are added, the amount required was \$13.80 per \$1,000 of true valuation. Adopting the latter figure, we observe (Table 16, Column 12) that every city expended more money in proportion to its wealth than did Janesville, and that two of them spent more than twice as much.

When we look at the different purposes for which the cities spent their money we find that the amounts for Janesville were relatively low for all of them. The amount spent for school purposes (\$5.33 per \$1,000 of wealth), was less than that of any other city in the list. The expenditure of Marinette (\$18.18 per \$1,000 of wealth) was on a distinctly different plane from that of the other cities, and was more than three times as great as the expenditure of Janesville. The median city (Wausau) spent \$7.81 per \$1,000 of wealth for school purposes. If Janesville had spent as much, its support of its schools would have amounted to \$111,988 instead of \$90,498. In making such an expenditure, moreover, the city would still have been surpassed by half of the remaining cities.

It is evident, as might be expected, that on the expenditure basis the position of Janesville is much the same as it was shown to be on the basis of the receipts by the Board of Education. The city is not burdening itself from any point of view in the

* Exclusive, as before, of public service enterprises, payments of principal on indebtedness, and general or trust payments to other civil divisions.

TABLE 16.—City Expenditures for Various Purposes Per \$1,000 of Wealth.

City	General government	Protection of person and property	Conservation of health	Highways	Charities and corrections.	Education other than school	School purposes	Recreation	Unclassified	Total	Interest	Total
	1	2	3	4	5	6	7	8	9	10	11	12
Appleton.....	\$1.41	\$2.83	\$0.52	\$5.41	\$0.44	\$0.18	\$9.08	\$0.25	\$0.19	\$20.31	\$1.29	\$21.60
Ashland.....	1.86	6.18	.96	3.98	.81	.04	8.95	.15	8.12	30.55	1.83	32.43
Beloit.....	2.51	2.88	.88	3.13	.04	.28	8.27	1.76	.26	22.01	.43	22.44
Fond du Lac.....	1.43	3.06	1.25	3.81	.58	.42	6.66	.70	.28	18.19	1.27	19.46
Janesville.....	1.03	2.05	.33	3.78	.....	.23	5.33	.11	.27	13.18	.62	13.80
Kenosha.....	.52	1.47	2.34	.31	1.76	.91	6.43	.83	.03	14.10	.65	14.75
Manitowoc.....	1.16	2.54	2.14	4.29	.62	.29	5.56	.31	.09	17.00	1.10	18.10
Marquette.....	1.02	3.70	.49	4.62	.48	.46	18.18	.06	.00	30.10	1.14	31.24
Wausau.....	1.17	3.02	1.16	3.59	.56	.25	7.81	.08	.04	17.68	.85	18.53

TABLE 17.—Rank of Cities in Expenditures Per \$1,000 of Wealth for Various Purposes.

City	General government	Protection of person and property	Conservation of health	Highways	Charities and corrections	Education other than school	School purposes	Recreation	Unclassified	Total	Interest	Total
	1	2	3	4	5	6	7	8	9	10	11	12
Appleton.....	4	6	7	1	6	8	2	5	5	4	2	4
Ashland.....	2	1	5	5	7	5.5	3	6	1	1	1	1
Beloit.....	1	5	6	2	8	.....	4	1	4	3	9	3
Fond du Lac.....	3	3	3	6	4	3	6	2	2	5	3	5
Janesville.....	7	8	9	7	9	5.5	9	7	3	9	8	9
Kenosha.....	9	9	1	9	1	1	7	3	9	8	7	8
Manitowoc.....	6	7	2	4	3	4	8	4	6.5	7	5	7
Marquette.....	8	2	8	3	2	2	1	9	6.5	2	4	2
Wausau.....	5	4	4	8	5	7	5	8	8	6	6	6

financing of its public schools. The opportunity for advancement in the schools of Janesville is particularly favorable. Other chapters in this Survey show the *need* of progress. This chapter shows the chance for it.

In order to give this report a wider scope, I have sought data on expenditures for cities outside of Wisconsin. For cities of over 30,000 inhabitants this would not be difficult, but for those of Janesville's population class no figures have been published since those of 1913. Even for that year some of them are unsatisfactory. The reader is therefore cautioned that the entries in Table 18, particularly those which involve the *wealth* of the cities, can do no more than show conditions approximately. The same 25 cities are represented as was mentioned above (page 55). Twenty-one of them are listed in Table 11.

The nine Wisconsin cities separately listed in other tables, are included. The figures in Table 18 are as published by the Bureau of the Census ("Wealth, Debt, and Taxation" Vol. II, 1913). The expenditures of the Wisconsin cities are represented to be considerably less than those furnished by the Wisconsin Tax Commission. This is largely accounted for by three facts: First, the Census figures are for an earlier year; second, they do not include payments for permanent improvements; and third, they include only such as were made from municipal revenues (e. g. state aid is excluded from school expenditures.) Nevertheless, the census figures as given in Table 18, are on the same basis for all cities and comparison is permitted.

In column 4 of Table 18 is given for each city the proportion of its total payments for city departments which was devoted to its public schools. Janesville's proportion was 38.6%. The reader will note that the percentages of payments for schools range from 58.2 to 33.0. The median percentage was 45.3. Janesville's percentage (38.6) was low, being exceeded by the percentage for all but three of the remaining cities. All of the other Wisconsin cities devoted a greater proportion to schools. These figures tend to show that Janesville is devoting a relatively small proportion of its city expenditures to the public education of its children.

The payments for *all general departments* per \$1,000 of assessed valuation are shown in column 5 of Table 18. The most typical amount was \$18.64. The amount for Janesville was

TABLE 18.—*Governmental Cost Payments for 25 Cities Having Populations Between 10,000 and 25,000, 1913.*

(Note: Data from "Wealth, Debt, and Taxation, 1915." Vol. II, Table 6.)

City	Population (a)	Total Payments For		Per cent spent for schools	Payments per \$1,000 of Assessed Valuation		Per Capita Payments	
		All general departments	Schools		All general departments	Schools	All general departments	Schools
	1	2	3	4	5	6	7	8
Appleton.....	17,321	219,978	102,650	46.67	16.40	7.05	12.70	5.93
Ashland, Wis.....	11,594 (b)	161,886	73,357	45.33	20.17	9.14	13.96	6.33
Beloit, Wis.....	16,647	186,246	84,102	49.99	13.92	6.98	10.11	5.05
Kenosha, Wis.....	25,050	288,230	107,587	40.11	10.70	4.29	10.71	4.29
Fond du Lac, Wis.....	19,994	205,091	96,968	47.28	16.74	7.91	10.26	4.85
Janesville, Wis.....	14,123	195,178	75,366	38.62	12.98	5.01	13.52	5.84
Manitowoc, Wis.....	13,428	169,254	74,944	44.28	18.15	8.03	12.60	5.58
Marquette, Wis.....	14,610 (b)	151,570	65,916	43.43	25.21	10.95	10.37	4.50
Wausau, Wis.....	17,926	196,090	91,177	46.53	20.46	9.52	10.93	5.09
Coffeyville, Kan.....	15,359	141,762	76,436	53.91	14.54	7.84	9.23	4.98
Lawrence, Kan.....	13,290	120,353	63,638	52.81	9.54	5.04	9.07	4.79
Pittsburg, Kan.....	15,635	177,377	80,062	45.14	16.23	7.32	11.34	5.12
Gary, Ind.....	16,802 (c)	428,023	147,925	34.57	21.34	7.37	25.47	8.80
Hammond, Ind.....	23,636	300,764	118,859	39.52	28.75	11.36	12.72	5.03
Richmond, Mich.....	23,550	282,689	126,457	44.38	18.64	8.27	12.00	5.33
Muskegon, Mich.....	25,114	302,321	164,314	54.35	25.68	13.96	12.04	6.54
Ann Arbor, Mich.....	14,917	213,833	124,472	58.22	16.14	9.39	14.33	8.34
Ironwood, Mich.....	13,832	177,027	99,659	56.31	16.14	3.41	12.80	7.21
Waukegan, Ill.....	18,225	162,987	53,807	33.03	6.06	16.27	8.94	2.96
Freeport, Ill.....	202,416	87,965	43.45	43.45	49.27	18.11	10.80	4.69
Virginia, Minn.....	12,911	200,134	121,825	49.83	19.86	9.31	20.15	9.44
Winona, Minn.....	18,583 (b)	191,244	71,353	37.31	17.12	6.39	20.15	3.84
St. Cloud, Minn.....	11,229	101,632	46,901	46.16	30.85	14.23	9.05	4.18
Mankato, Minn.....	10,365 (b)	122,982	49,220	39.32	21.29	8.53	11.85	4.75
Stillwater, Minn.....	10,188 (b)	99,468	43,626	43.90	20.87	10.20	9.76	4.77
Medians.....				45.33	18.64	8.27	11.34	5.06

(a) Estimated as of July 1, 1913.

(b) Population enumerated as of April 15, 1910; decrease since 1900; no estimate made.

(c) Population enumerated as of April 15, 1910; incorporated since 1900; no estimate made.

\$12.98. Only three cities, (one in Wisconsin) show lower amounts than this. Some cities spent two or three times as much as this per \$1,000. Again, therefore, we have from a different source, a confirmation of the fact we have already brought out, namely, that the burden of taxation on the property of Janesville is relatively light. The payments for *school purposes* per \$1,000 of assessed valuation amounted at Janesville to \$5.01 (column 6.) The amounts for other cities were less in only two instances. The median amount for all the cities was \$8.27. This points in the same direction as before and supports the statement made in another connection that Janesville is not expending as much money for schools in proportion to its wealth as most of the cities of its class.

The statements made in the preceding paragraph would be much more reliable if it were possible to base them upon true rather than assessed valuation of property. It is likely, however, that the ranking of the cities would be little affected if this were done. For example, a ranking of the nine Wisconsin cities was made on the basis of both assessed and true valuation. The first and last cities were the same on both bases and the seven intermediate cities, except in two instances, either had the same rank or their rank on one basis differed from their rank on the other by but one. It is certain that whatever changes in the entries in columns 5 and 6 of Table 18 might be made by using the true valuation of city property, it would not be such as to make Janesville's amounts expended per one thousand dollars other than low.

In relation to population, however, the expenditures of Janesville are higher than those of most of the cities with which we are making comparison. Column 7 of Table 18 shows that the expenditure per capita for all general departments was \$13.82. This was above the median (\$11.34), and was exceeded by the amounts for only four of the cities. The expenditure per capita for school purposes (column 8) was \$5.34. This was also above the median and was exceeded by the amounts for eight of the other 24 cities. According to Table 18, therefore, it appears that, while in relation to wealth Janesville's support of schools is small, its support of them in relation to its population is above the average. As has been said before, the wealth of Janesville is large and this ought to enable it to take a commanding posi-

tion among cities of its class in the amount of its expenditures for school purposes. It has about \$1200 per person. In 1913, even on the assessment basis, it had well over \$1000. Whether \$5.34 of this is enough to spend for public schools, and whether with such resources a position of ninth among these 25 cities is satisfactory—these are questions for the citizens of Janesville to decide.

In Table 19 is shown for each city the average cost per pupil enrolled. Twenty-two of the same 25 cities are represented. The enrollment figures (column 1) are as given in the Report of the Commissioner of Education for the school year 1912-13. Cost data are for 1913. (See Table 18, column 3) The Janesville expenditure amounted to \$30.39 per pupil, and it ranked 12th among the 22 cities. The median for these cities was \$30.66. Thus the amount expended at Janesville in 1912-13 was somewhat less than the most typical figure for these cities. The cities, however, which exceeded Janesville did so by large amounts, while the cities which did not spend as much as Janesville fell short of it by small amounts. While, therefore, the rank of

TABLE 19.—*Cost of Schools Per Pupil Enrolled—Data for 1913*

City	Public school enrollment	School cost per pupil enrolled	Rank
	1	2	3
Appleton, Wis.....	2,784	\$36.87	3
Ashland, Wis.....	2,021	38.30	4
Beloit, Wis.....	3,684	22.83	21
Kenosha, Wis.....	3,767	28.56	15
Fond du Lac, Wis.....	3,316	29.24	14
Janesville, Wis.....	2,480	30.39	12
Manitowoc, Wis.....	2,173	34.40	8
Marinette, Wis.....	2,981	22.08	22
Wausau, Wis.....	3,885	28.59	20
Coffeyville, Kan.....	3,230	23.66	19
Lawrence, Kan.....	2,671	23.83	18
Pittsburg, Kan.....	No data		
Gary, Indiana.....	4,188	35.32	5
Hammond, Indiana.....	4,309	27.58	17
Richmond, Indiana.....	4,057	30.92	11
Muskegon, Mich.....	4,758	34.53	7
Ann Arbor, Mich.....	2,703	46.05	1
Ironwood, Mich.....	2,879	34.62	6
Waukegan, Illinois.....	No data		
Freeport, Illinois.....	2,978	29.53	13
Virginia, Minn.....	2,730	44.62	2
Winona, Minn.....	2,516	28.86	16
St. Cloud, Minn.....	No data		
Mankato, Minn.....	1,581	31.13	10
Stillwater, Minn.....	1,510	32.20	9
Median.....		30.66	

Janesville was only a little below a middle one, its expenditure of \$30.39 was considerably nearer the minimum (\$22.08) than the maximum (\$46.05).

Analysis of School Expenditures: (a) By Items:

Having given an analysis of city expenditures, and having shown as one item of the city expenditure the expenditure for school purposes, we shall now analyze the latter into sub-items, indicating more finely distinguished purposes of expenditure. Table 20 shows for the most recent 5-year period such an analysis of expenditure. The data were furnished by the Secretary of the Janesville School Board. The increase in total expenditures amounted to nearly \$19,000, which was an advance of 28% over those for 1912-13. The item showing the largest amount of increase is that for high-school teachers' salaries, which was \$6,841, or 48%. While the expenditures during the period increased nearly \$19,000, the enrollment was practically stationary, (See Table 7 above). It is clear, therefore, that the schools are being more liberally financed as the years go by. A part of this increase is due to a general tendency everywhere for education to become more important as a city enterprise and more expensive.

Expenditures for various purposes in different cities may be compared through the use of material reported in the publications of the Bureau of Education. So far as it is accurate, we are able to infer whether a given city is high or low in the money which it spends for its board office, its superintendent's office, for the salaries of its teachers, the wages of its janitors, etc. Table 21 is the fundamental table for exhibiting such comparisons. It gives the amounts expended for various purposes in 1914-15, and the total for school purposes.* It needs interpretation, however. It is not easy to say whether, for example, the \$7,612 which Janesville spent for wages of janitors was unusually high or unusually low. Table 22 is computed from Table 21 by converting each amount into a percentage of the total expenditure for the city in question. It now becomes evident that in

* It will be observed that the total amount for Janesville is not the same as is given in Table 20. The Secretary of the Janesville Board of Education furnished the data for Table 20, while the data for Table 21 were taken from the Report of the Commissioner of Education. The extent to which items were included in the one and not in the other cannot now be ascertained. Table 21, however, having been collected from all cities on a uniform schedule is valid for purposes of comparison.

TABLE 20.—Janesville School Expenditures.

Items	1912-13		1913-14		1914-15		1915-16		1916-17		Increase 1912-13 to 1916-17	
	1	2	3	4	5	6	7	8	9	10	11	12
Superintendent's office ⁽¹⁾	\$3,500 00	\$4,030 00	\$5,154 54	\$4,519 17	\$4,300 66	\$300 66						
Teachers salaries:												
Kindergarten.....	2,774 10	3,306 53	3,745 60	3,930 60	4,049 05	1,274 96						
Elementary schools ⁽²⁾	27,394 78	27,718 06	30,491 52	32,095 23	31,872 74	4,477 96						
High schools ⁽²⁾	14,164 90	15,901 66	17,757 15	19,613 74	21,006 03	6,841 13						
Janitors' salaries.....	7,500 00	7,572 24	7,770 00	8,305 66	8,780 00	780 00						
Fuel, power, water, etc.....	4,283 89	4,220 85	4,344 42	4,330 99	4,393 20	609 31						
Repairs.....	1,616 97	5,763 51	2,166 81	2,865 78	1,079 77	537 20 ⁽⁴⁾						
Improvements.....	.....	2,893 14	2,566 81	709 90	867 76	867 76						
Supplies.....	2,850 60	3,251 02	3,895 97	4,007 79	3,613 53	753 93						
Incidentals.....	1,531 78	2,700 22	2,462 90	1,811 67	4,415 95	2,834 17						
Insurance.....	1,068 00	1,021 50	1,355 75	1,353 00	1,311 14	243 14						
Total.....	\$66,744 02	\$77,878 73	\$78,181 27	\$83,543 53 ⁽²⁾	\$85,689 84	\$18,945 82						

⁽¹⁾ Salaries only.⁽²⁾ The salaries of teachers of Manual Training, Domestic Science, and Music have been prorated between Elementary School and High School.⁽³⁾ \$3,865.65 for a building addition is not included.⁽⁴⁾ Decrease.

TABLE 21.—Expenses for School Purposes, 1914-15.

City	Board's office		Superintendent's office		Salaries of principals and teachers		Wages of janitors and other employees		Fuel	Water, light etc.	Maintenance etc.	Miscellaneous	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13
Appleton, Wis.	4514	\$1,650	\$75,021	\$7,914	\$5,800	\$3,565	\$7,544	\$5,913					\$107,921
Ashland, Wis.	1,511	2,054	52,202	6,102	3,034	1,414	5,153	6,238					77,713
Beloit, Wis.	1,101	4,411	66,069	7,147	6,912	2,551	3,650	5,916					97,757
Kenosha, Wis.	1,312	5,209	101,600	10,833	5,290	8,485	7,398	7,111					147,248
Fond du Lac, Wis.	200	3,211	71,039	6,360	2,513	6,401	8,843	747					99,314
Janesville, Wis.*	300	3,200	49,257	7,612	4,221	500	6,736	658					72,534
Manitowoc, Wis.	856	3,170	53,758	6,311	5,069	2,406	4,375	4,886					80,831
Marquette, Wis.	432	3,461	45,784	5,070	2,514	2,669	725	6,785					65,440
Wausau, Wis.		4,403	62,135	6,734	15,975	1,833	9,608	6,785					65,440
Coffeyville, Kan.		3,650	58,642	5,527	1,910	1,253	15,008	6,944					107,632
Lawrence, Kan.		2,706	49,128	3,976	2,485		2,338	4,057					90,047
Pittsburg, Kan.	3,119	2,407	60,566	4,955	2,376		2,338	1,846					65,598
Gary, Ind.		5,673	163,397	20,608	11,053		5,010						78,196
Hammond, Ind.*	11,267	5,655	115,945	11,000	3,500	12,195	30,741	16,487					273,421
Richmond, Ind.	800	4,679	105,883	11,984	5,633	700	3,000	146,350					146,350
Muskegon, Mich.	3,053	6,878	113,432	10,142	5,658	4,449	4,673	7,522					145,673
Ann Arbor, Mich.	1,783	3,225	80,020	7,614	5,675	3,383	6,836	9,269					153,649
Ironwood, Mich.	1,500	3,150	69,819	8,851	5,022	2,217	4,281	15,225					119,920
Waukegan, Ill.	1,075	2,580	43,257	5,831	4,303	3,175	10,991	10,991					105,321
Freeport, Ill.	1,289	2,900	69,969	8,457	4,080	1,500	12,488	3,060					74,064
Virginia, Minn.	6,834	5,904	100,965	14,497	7,928	4,487	6,910	5,692					103,784
Winona, Minn.	1,080	3,990	28,282	10,060	4,100	3,067	6,851	19,187					166,133
St. Cloud, Minn.	1,437	2,830	31,360	3,572	2,399	3,000	7,000	6,150					59,662
Mankato, Minn.	1,056	2,425	37,055	4,085	4,565	2,823	4,806	3,588					47,723
Stillwater, Minn.	450	2,400	35,749	4,690	2,927	2,873	2,604	2,293					58,608
								2,773					54,266

*Statistics of 1913-14.

TABLE 22.—Percentages of School Expenditures Devoted to Specified Purposes, 1914-15.

City	Board's office	Superintendent's office	Salaries of principals and teachers	Wages of janitors and other employees	Fuel	Water, light, etc.	Maintenance, etc.	Miscellaneous
	1	2	3	4	5	6	7	8
Appleton, Wis.....	0.48	1.53	69.52	7.33	5.37	3.30	6.99	5.48
Ashland, Wis.....	1.94	2.64	67.18	7.85	3.90	1.82	6.64	8.03
Beloit, Wis.....	1.13	4.51	67.59	7.31	7.07	2.61	3.73	6.95
Kenosha, Wis.....	0.89	3.54	39.00	7.43	3.59	5.76	4.96	4.83
Fond du Lac, Wis.....	0.20	3.23	71.54	6.40	2.53	6.45	8.90	0.75
Janesville, Wis.*	0.41	4.41	67.91	10.49	5.82	0.69	9.36	0.91
Mantowoc, Wis.....	1.06	3.92	66.51	7.81	6.27	2.98	5.41	6.04
Marquette, Wis.....	0.66	5.29	69.98	7.75	3.84	1.02	1.11	10.37
Wausau, Wis.....	0.66	4.09	57.73	6.28	14.84	1.70	8.93	6.45
Conserve, Wis.....	0.66	4.05	65.12	6.14	2.12	1.39	16.67	4.51
Coffeyville, Kan.....	0.66	4.12	74.90	6.07	3.79	.....	3.56	2.81
Pittsburg, Kan.....	4.75	3.08	77.45	6.34	3.04	6.24	3.85	.....
Lawrence, Kan.....	4.12	2.07	77.45	6.34	3.04	6.24	3.85	.....
Gary, Ind.....	4.12	2.07	60.50	7.54	4.04	4.46	11.24	6.03
Hammond, Ind.*	0.31	3.86	79.23	7.51	2.39	0.48	2.05	4.17
Richmond, Ind.....	0.56	3.21	72.69	8.23	3.90	3.05	3.21	5.16
Muskegon, Mich.....	1.92	4.34	71.50	6.39	3.57	2.13	4.31	5.84
Ann Arbor, Mich.....	1.49	2.69	66.73	8.35	4.73	1.85	3.55	12.61
Ironwood, Mich.....	1.42	2.99	65.82	8.40	4.77	3.02	3.15	10.43
Waukegan, Ill.....	1.45	3.48	58.39	7.87	5.81	2.02	16.85	4.13
Freeport, Ill.....	1.24	3.79	67.43	8.15	3.93	4.32	6.66	5.48
Virginia, Minn.....	4.11	3.55	60.76	8.73	4.77	2.39	4.12	11.55
Winona, Minn.....	1.81	6.99	47.40	10.16	6.87	5.03	11.73	10.31
St. Cloud, Minn.....	3.01	5.93	65.72	7.48	5.03	1.30	4.05	7.48
Mankato, Minn.....	1.80	4.14	63.23	6.99	7.79	3.94	8.20	3.89
Stillwater, Minn.....	0.82	4.42	65.98	8.65	5.39	4.93	4.80	5.11
Medians	1.13	3.86	67.18	7.51	4.73	2.81	4.96	5.48

*Statistics of 1913-14.

TABLE 23.—Cost Per Student for Items Indicated (Based on Average Daily Attendance) 1914-15.

City	Average daily attendance	Board's office	Superintendent's office	Salaries of principals and Teachers	Wages of janitors and other employees	Fuel	Water, light, etc.	Maintenance, etc.	Miscellaneous	Total
	1	2	3	4	5	6	7	8	9	10
Appleton, Wis.	2,280	\$0.23	\$0.72	\$32.90	\$3.47	\$2.54	\$1.56	\$3.31	\$2.59	\$47.33
Ashland, Wis.	2,012	.75	1.02	25.95	3.03	1.51	.70	2.56	3.10	38.63
Beloit, Wis.	3,149	.35	1.40	20.98	2.27	2.20	.81	1.16	1.88	31.04
Kenosha, Wis.	3,444	.38	1.51	20.50	3.18	1.54	2.46	2.12	2.07	42.75
Fond du Lac, Wis.	3,137	.06	1.02	22.65	2.03	.80	2.01	2.82	.24	31.46
Janeville, Wis.	2,099	.15	1.55	23.82	3.68	2.04	.24	3.28		35.08
Manitowoc, Wis.	2,102	.41	1.51	25.57	3.00	2.41	1.15	2.08	2.32	38.45
Marquette, Wis.	2,492	.17	1.36	19.17	2.04	1.01	.27	2.29	2.72	26.26
Wausau, Wis.	2,543	.....	1.44	23.06	2.17	4.93	.57	5.90	2.14	33.20
Coffeeville, Kan.	2,250	1.30	1.20	21.83	1.77	.75	.49	1.60	1.82	35.41
Lawrence, Kan.	3,165	.....	.76	10.13	1.57	1.10	.....	1.04	.....	29.15
Pittsburg, Kan.	3,138	.....	1.80	36.95	1.52	.75	1.54	.95	.....	24.70
Hammond, Ind.	3,559	.23	1.32	26.91	3.51	1.12	1.22	.96	1.04	46.64
Richmond, Ind.	4,215	.72	1.63	26.01	3.37	1.60	1.25	1.31	2.11	40.93
Muskegon, Mich.	2,424	.74	1.33	33.01	2.41	1.84	.92	1.62	2.20	37.64
Ann Arbor, Mich.	2,658	.56	1.19	26.08	3.14	2.34	1.20	1.76	6.24	49.47
Ironwood, Mich.	2,668	.48	1.09	26.08	3.33	1.89	1.20	1.25	4.14	39.62
Freeport, Ill.	2,661	.....	1.09	24.29	3.18	1.53	1.69	2.60	2.14	39.00
Virginia, Minn.	2,877	2.38	2.05	35.09	5.04	2.76	1.88	2.38	6.67	57.74
Mankato, Minn.	1,462	.72	1.66	25.35	2.80	3.12	1.59	3.29	1.56	40.09
Medians.....	.....	.37	1.37	25.76	3.02	1.57	.92	2.10	2.11	38.54

*Statistics for 1913-14.

the matter of wages of janitors the expenditure at Janesville was inordinately high, exceeding, in relation to the total expenditure, that of any other city in the list. Of each \$100 of expenditure for school purposes, Janesville devoted \$10.49 to the payment of janitors' wages. The median amount for these cities was \$7.51. The relative expenditure for fuel was also high, amounting to \$5.82 out of each \$100, only five of the 25 school systems spending more for this item. The proportion of money spent for maintenance (\$9.36 in each \$100) was unusually high, only four of the 25 school systems spending more. The unduly large proportion of school money devoted to janitors' salaries, fuel, and maintenance at Janesville is no doubt occasioned by the large number of small buildings with their numerous and more or less unsatisfactory heating systems, and by the fact that the buildings are for the most part old and in need of frequent repairs. More than one-fourth of the school money was devoted to these three purposes.

Table 23 is to be taken in connection with Table 22 as explaining and interpreting the expenditures for the various purposes set up in Table 21. Table 23 reduces these expenditures to amounts per pupil in average daily attendance. Janesville (in 1914-15) spent for all school purposes \$35.08 per child in average daily attendance. The median for the 20 cities* listed in Table 23 was \$38.54. Thus the amount for Janesville was \$3.46 less than the most typical amount for these cities and its rank was 14th among the 20. The expenditures for wages of janitors, for fuel, and for maintenance are again shown to have been unusually high. For janitors' wages, only one city spent more money per pupil than did Janesville; for maintenance, only three cities spent more; and for fuel, seven cities spent more.

The most essential form of expenditure for school purposes in the sense of yielding the largest returns educationally is the amount spent for teachers and supervisors. Any defect in this respect will surely be reflected in the character of the work done by the schools. At Janesville \$23.82 was spent in 1914-15 per child in average daily attendance for salaries of principals and teachers. This was relatively low, being nearly \$2.00 less than the median amount. The rank of the city in this item of expenditure was 13th among the 20 cities.

* Data for 5 of the cities not being available.

We may summarize the situation for Janesville as revealed by Table 23 by saying that its expenditures were below the most typical figure for the 20 cities for (a) the board's office; (b) the salaries of teachers and principals; (c) water, light, etc., and (d) miscellaneous expenses. We may further say that its expenditures were markedly above the typical figures in the following items: (a) wages of janitors and other employees; (b) fuel, and (c) maintenance (repairs and replacements). Whether the items upon which emphasis is being placed are the ones on which it should be placed is a question. The expense for janitorial service, fuel, and repairs is excessive and no doubt absorbs money which should be available for instructional purposes.

Analysis of School Expenditures: (b) By Schools:

A further analysis of expenditures may be made by schools. In the original draft of this chapter which was furnished to the Board of Education and the Survey Committee, tables were included showing the expenditures for each year of the most recent 5-year period, distributed by schools. A table was also submitted showing for the same years the cost per pupil in average daily attendance at each school. These tables are not repeated here. They may be consulted at the office of the Board of Education by any who are interested in them. They showed, among other things, a conspicuous increase in the expenditures for special work—i. e. for such subjects as Drawing, Music, Manual Training, etc.—both in the elementary schools and in the high school. They also showed that the cost per pupil in average daily attendance had increased within the last four years much more rapidly in some schools than in others, while the cost per pupil in all the elementary schools combined had increased from \$25.14 to \$36.47. While the absolute increase in the cost of high school work was nearly twice as great as that of elementary school work, the increased high school cost was mainly due to increase in the number of pupils. On the basis of expenditures per pupil, the cost for elementary schools increased in the four years from 1912-13 to 1916-17 from \$25.14 to \$36.47, or 45.0%. During the same period, the cost per pupil for the high school increased from \$35.09 to \$42.43, or 38.7%.

As to the elementary schools, Table 24 shows the cost per pupil for each school distributed according to the purposes for

which the money was spent. The total cost per pupil is also shown. The data are for 1916-17. The total cost ranged from \$25.60 per pupil at the Adams school to \$51.97 at the Jackson school. Students are transferred from one school to the other on the assumption that instruction given in one of them is equivalent to that given in another. Clearly all the schools of the city are presumed to be doing work of same quality. It is surprising, therefore, that the city is paying twice as much for it in one school as it is in another.

The size of the school has apparently a pronounced effect upon the cost per pupil. The large schools are run much more cheaply than the small ones. The Jackson school, at which the cost is very much greater than at any other school, is also the smallest organization. If columns 1 and 2 of Table 24 are compared, the relation between the size of a school and the economy of its operation is at once evident. Small schools cost more than large schools, and large schools, through the superior organization which they are able to put into effect, can do better work.

A detailed showing of the extent to which a more economical organization is found in the larger schools is given in columns 3 to 10 of Table 24. The cost of teachers' salaries, for example, is much lower at the Washington, Adams, and Jefferson schools than at any of the others. These schools had average attendances in 1916-17 of 241, 282, and 305 respectively. No other school had an average attendance of more than 130. The elementary schools, therefore, fall naturally into two rather distinct groups. One group is characterized by large numbers of pupils and low cost for teachers' salaries, while the other group is characterized by small numbers of children and large costs for teachers' salaries. This same distinction obtains in the matter of janitors' salaries. The three schools just mentioned cost markedly less per pupil for janitorial service than did any of the remaining six schools.

It has been recommended in the chapter on "Buildings" in this Survey that the Jackson school be discontinued and the pupils transported to another building. The extraordinarily high unit cost for janitorial salary (\$13.99 per pupil) at the Jackson school offers a suggestion for financing the transportation of pupils without additional cost to the city. The 39 children who attended the Jackson school last year belonged to the

TABLE 24.—Expenditure of Elementary Schools Per Pupil In Average Daily Attendance, 1916-17.

School	Average daily attendance									
	1	2	3	4	5	6	7	8	9	10
Adams.....	282	\$25.60	\$19.50	\$2.55	\$.64	\$.19	\$.39	\$.40	\$1.63	\$.30
Douglas.....	130	35.93	25.00	5.10	.50	.30	.48	.98	3.57	.....
Garfield.....	95	36.38	23.70	6.34	.45	3.28	.40	.....	2.23	.....
Grant.....	105	33.58	23.66	5.70	.52	.23	.49	1.01	1.97	.....
Jackson.....	39	51.97	31.23	13.99	.67	.45	.73	.91	3.94	.....
Jefferson.....	305	28.93	19.73	3.93	.59	.54	.78	.17	2.65	.54
Lincoln.....	113	39.75	22.36	5.82	.31	.69	1.74	.85	5.83	2.15
Washington.....	241	27.84	20.96	2.90	.33	.97	.24	.53	1.49	.28
Webster.....	108	36.42	25.42	5.55	.67	.12	.76	.....	3.90	.....
All schools.....	1,433	31.28	21.65	4.40	.52	.65	1.25	.46	2.61	.39
Special subjects.....	1,433	5.18	3.42	.....	.51	.....	.....	.....	.....	.....
Total.....	1,433	36.46	25.07	4.40	1.03	.65	1.85	.46	2.61	.39

first four grades. If they had been transported on each of the 190 days of school by street car at half fare, the cost per pupil would have amounted to \$9.50 ($190 \times \0.05) and the janitorial service alone last year cost \$13.99 per pupil, through keeping the Jackson building open. Of course, other savings would be effected by closing the Jackson building. The cost last year of \$3.94 per pupil for fuel would have been greatly reduced—if the building had not been used; while the item for repairs (\$0.45 per pupil) would have been entirely wiped out. If the building should be sold, the item for insurance, which amounted to \$0.91 per pupil last year, would be eliminated. A reasonable estimate would be that by closing the Jackson building, the city would save \$8.00 per pupil. If one or both of the teachers at the Jackson school could be dispensed with by such an arrangement—a thing not at all improbable—the saving would be much greater. Moreover, such an arrangement would give better instruction to the pupils, since at the Jackson school the two grades are now taught in each room, and the time allotments, to the various subjects are said to be too small in some cases to permit effective teaching.

“Supplies”, “repairs”, and “incidentals” do not appear to be items which are distinctly affected by the size of the school when figures are given on a unit basis. The item of fuel is greatly affected by the character of the heating and ventilating systems. This fact tends to obscure the economy due to size of building. Nevertheless, the Adams and Washington schools (two of the three largest) have the lowest unit cost for fuel. In many ways, therefore, the essential economy of conducting the school business of the city in larger units than those at present in use is apparent.*

Analysis of School Expenditures: (c) Elementary Schools and High School

With a given amount of money available, the question of how it is distributed as between elementary and secondary or high school work is important. Table 25 shows for each year of the most recent 5-year period the cost per pupil in the high school

* A further analysis of school expenditures could be shown, if space permitted, in which the expenditures for each year would be given by schools and by items, such as teachers' salaries, janitors' salaries, etc. These tables have been made up and will be made available to any who are interested in them.

and in the elementary schools of the city. In the first year of the period, the cost of instructing a high school pupil was more than twice the cost of instructing an elementary school pupil.

TABLE 25.—*Cost Per Pupil In Average Daily Attendance.*

Year	High School	Elementary school	Total
	1	2	3
1912-13.....	55.31	25.14	34.28
1913-14.....	60.54	27.78	37.10
1914-15.....	54.72	30.22	37.81
1915-16.....	62.04	33.79	42.54
1916-17.....	59.97	36.59	44.77

During the last three years of the period, however, the cost in the elementary schools has increased so much more rapidly than the cost in the high school that the ratio of two to one has been considerably reduced. Nevertheless, it is apparent that instruction in the high school is costing a great deal more than instruction in the elementary schools. This difference is universal throughout the country. It has been impossible to obtain for the other cities of the class of Janesville figures comparable to those in Table 25. The Report of the Commissioner of Education, however, permits a comparison of the expenditures in 1914-15 for teachers' salaries in high and elementary schools in the nine Wisconsin cities belonging to the population class of Janesville.

Table 26 is an answer to two questions: First, what *proportion* of the payments for teachers' salaries are for high school service and for elementary school service; Second, what is the cost of teachers' salaries *per pupil* in the high school and in the elementary school. It appears that of the entire amount spent for teachers' salaries in 1914-15, Janesville spent a little more than 34% for high-school teachers' salaries. This was a greater proportion than for any other city except one. Correspondingly, of course, Janesville devoted a smaller proportion of its salary money to elementary schools than did any other city except one. The figures in columns 1 and 2 to which we are referring have to do with proportional expenditure, i. e. with relative emphasis. It would be possible for a city actually to be spending little for

high school salaries and yet to be devoting to high school purposes an extraordinarily large percentage of its salary payments. As far as Janesville is concerned, however, when we consult the cost of teachers' salaries per pupil (Table 26 col-

TABLE 26.—*Relation of Expenditures for Teachers' and Principals' Salaries in High School and in Elementary Schools*¹

City	Per cent of teachers' and principals' salaries for		Cost of teachers' and principals' salaries per pupil in average daily attendance	
	High schools	Elementary schools	High schools	Elementary schools
	1	2	3	4
Appleton	33.51	66.49 *	\$60.72	\$26.74
Ashland	31.43	68.57	39.53	22.42
Beloit	33.82	66.18	44.69	16.51
Kenosha	21.17	78.83	44.24	22.69
Fond du Lac	27.21	72.79	45.70	19.05
Janesville	34.15	65.85	47.73	19.82
Manitowoc	37.54	62.46	42.22	20.67
Marinette	32.63	67.37	40.88	14.54
Wausau	32.04	67.96	43.60	16.91

¹ Source of Data: Report of Commissioner of Education for the year ended June 30, 1916. The figures, however, are for 1914-15.

umns 3 and 4), we find that the actual money spent for high-school teachers' salaries was also high, being \$47.73 per pupil—an amount exceeded in the case of but one city. On the other hand, we find that the cost per pupil for elementary teachers was not high. It amounted to \$19.82. The amounts for four of the cities were smaller, and the amounts for four of them were larger. Thus the relative basis and the unit basis unite to show that the high school is being more liberally financed than the elementary schools. This might mean that the high school is being over-financed, but all that we have shown above concerning receipts and expenditures indicate that this is not the case. The alternative statement is forced upon us, namely, that the discrepancy between the support of the high school and that of the elementary schools is due to the fact that the elementary schools are under-financed. Not only are the payments for their operation relatively small when compared with payments for similar purposes in other cities, but an unusually large proportion of these payments are being diverted from the essential work of education to the carrying on, under adverse conditions, of the

work of heating, cleaning, and repairing the buildings. Moreover, a part of the money which is being used for instructional purposes—e. g., for teachers' salaries—is being unproductively employed because the large number of small buildings requires the teaching of the children in small groups with two grades in a room and prevents the effective organization of the instructional work.

Teachers' Salaries

No satisfactory treatment of how schools in any city are financed can be given without considering teachers' salaries. The schools exist for the instruction of the children, and the instructional cost is primarily the money paid for teachers' salaries. The amount used for this purpose, therefore, represents more than any other the productive expenditures for school purposes. Not only does the item of teachers' salaries derive great importance from this fact, but it is also important since payment for teachers' salaries usually involves about two-thirds of the entire educational expenditure of a city system.

A table, included in the manuscript copies of this chapter and furnished to the members of the Board of Education and the Survey Committee, contained the salaries paid to each incumbent of a teaching position for each school year from 1905-06 to 1916-17 inclusive. This table is not reproduced here. Tables 27, 28, and 29 are, however, deduced from it.

Table 27 shows the number of positions, the average salary, and the variation in salaries in the high school, the elementary schools, the kindergartens, and in all schools combined from 1905-06 to and including 1916-17. Under the heading "Average Deviation" there is shown, for each type of school and for each year, a measure of the amount by which the individual salaries differ from the ascertained average. A word of explanation concerning the significance of the Average Deviation may not be amiss. An average is a measure of the general weight of a series of items. It gives, as well as a single figure can, the purport of the series. It indicates nothing, however, as to the closeness of grouping of the measures around the average. For example, the average salary of the ten high-school teachers in 1905-06 was \$736. There is nothing in the figure to indicate whether all the teachers received \$736, or whether they differed

TABLE 27.—Average Salaries of Teachers in Janesville Schools.*

Year	High School**			Elementary school**			Kindergarten			All schools		
	No. of positions	Average salaries	Average deviation	No. of positions	Average salaries	Average deviation	No. of positions	Average salaries	Average deviation	No. of positions	Average salaries	Average deviation
	1	2	3	4	5	6	7	8	9	10	11	12
1905-6.....	10	\$736	\$43	44	\$445	\$49	4	\$448	\$13	58	\$405	\$103
1906-7.....	11	751	49	44	469	49	4	487	21	59	523	103
1907-8.....	12	808	40	44	485	50	4	487	21	60	550	119
1908-9.....	12	831	63	44	505	49	4	482	26	60	569	120
1909-10.....	12	839	69	44	521	49	4	494	29	60	583	119
1910-11.....	13	808	102	44	528	51	4	498	39	61	586	119
1911-12.....	14	930	99	44	536	58	4	463	44	62	597	128
1912-13.....	16	869	109	45	538	54	5	496	33	66	615	134
1913-14.....	18	889	102	45	570	68	5	525	30	68	651	143
1914-15.....	18	919	115	46	591	77	5	550	30	69	674	147
1915-16.....	19	958	102	46	629	76	5	575	30	70	714	152
1916-17.....	21	963	120	46	645	74	5	600	30	72	785	154

*Entries are made to the nearest dollar.

**Principal of high school is not included. Bonus to elementary school principles is included.

widely above and below this amount. When to the fact that the average salary was \$736 is added the further fact that the average deviation of the ten salaries was \$43, we see at once that the range of salaries above and below the average was rather wide—wide enough so that when the differences between the individual salaries and the average are summed and divided by the number of persons, the result is \$43. In other words, the individual salaries differ, on the average, from \$736, by \$43. These two figures—namely the average and the average deviation—constitute a fairly satisfactory summary of the series of salaries for each year.

It is evident from Table 27 that the average salary of a teacher, whether in the high school, elementary school, or the kindergarten, has been steadily increasing during the last ten years. The increase in the average salary of high-school teachers has been \$227, or 31%; that for elementary-school teachers has been \$200, or 45%; and that for kindergarten teachers has been \$152, or 34%. When all the teachers are considered as a single group, the average salary has increased \$240, or 48½%.*

The average salaries of elementary-school teachers as given in Table 27 include bonuses paid to those who act as principals. According to the arrangement at Janesville, the teacher of the highest class in any building acts as principal and receives an extra compensation for the service amounting to \$1.50 per room each month.** Since there are 49 rooms in the nine elementary school buildings, this amounts to \$735 as the expenditure for elementary school principals. This is not a satisfactory arrangement from an educational point of view. The teacher-principal cannot supervise; her functions aside from those of a teacher are mainly clerical. Janesville, therefore, has no elementary school supervision except such as the superintendent himself can exercise. In "The Tangible Rewards of Teaching,"*** the entire teaching staff of a great number of the cities of the country are given as they were in 1912-13. Among the ten Wisconsin cities of the population class of Janesville three had, at that

* It will be observed that the amount and percentage of increase for all teachers taken together is greater than the same figures for any one of the groups. This is caused by the fact that while the number of elementary and kindergarten teachers has remained practically stationary throughout the period, the number of high-school teachers has more than doubled.

** If these amounts had been excluded, the average salary of elementary school teachers would have been shown to be \$16 or \$17 less than the amounts given in Table 27.

*** U. S. Bureau of Education, Bulletin 1914, No. 16.

time, supervising principals in their elementary schools, and five others had principals. Janesville had neither; nor has it at the present time. The conclusion is that the schools lack sufficient supervision.

At present (1916-17) the average salary of high-school teachers at Janesville is \$963; the average salary in the elementary schools is \$645 (or, if the principal's bonus is included, \$661); and the average salary of kindergarten teachers is \$600. The average salary of all teachers in the public schools is \$735.

Abundant material for comparisons of teachers' salaries at Janesville with those of teachers in other cities of the same population class is afforded in the bulletin of the United States Bureau of Education entitled "A Comparative Study of the Salaries of Teachers and School Officers." The data contained in this publication are for the year 1914-15. The average salary of elementary-school teachers at Janesville is given (page 97) at \$565. Among the 244 cities other than Janesville listed as having populations between 10,000 and 25,000, the average salaries were higher in 113 cities and lower in 131. The median of the 245 averages—which may be taken as the most representative figure for all of them—was \$560. Since Janesville's average salary is given at \$565, it will be seen that the salaries at Janesville are indicated to be slightly above the median or average conditions in cities of the same population class throughout the country. When we recognize, however, that many sections of the country are included whose educational condition the State of Wisconsin does not desire to emulate, and when we consider that nearly half of the cities provide salaries in excess of those paid at Janesville, we may properly conclude that the salaries of teachers in that city are lower than they ought to be.

The insufficiency of the average, even when supplemented by a measure of variation such as the average deviation, lies in the fact that in giving a generalized statement it obscures the details. In Table 27 the entire teaching force at Janesville as it was in 1916-17 is distributed according to the salaries received. The variation for high-school teachers is from \$750 to \$1,200. Elementary-school teachers range from \$500 to \$1,000. The variation in salaries at Janesville is not conspicuously large.*

* For comparative data on this point, see Bulletin Bureau of Education, 1915, No. 31, page 97. If the three special teachers classified as elementary school teachers are excluded, the upper range of salaries is \$650. If the bonus for acting as principal is added, the maximum salary is \$785.

The salaries of the elementary-school teachers have been examined with the idea of showing: (1) whether or not the policy at Janesville is to pay higher salaries in some grades than in others, and (2) whether the increase in average salaries in the past ten years has been especially for the benefit of teachers in any particular grade or group of grades. In general, it was

TABLE 28.—*Distribution of Teachers According to Their Salaries, 1916-17.*

(Note: The bonus to principals of elementary schools is not included.)

Salary Groups	High school	Elementary school	Kindergarten	All
	1	2	3	4
500-549.....		7		7
550-599.....		7	2	9
600-649.....		9	2	11
650-699.....		20 (a)	1 (a)	21 (a)
700-749.....	1			
750-799.....	2			2
800-849.....	1	1 (b)		2
850-899.....	2			2
900-949.....	2			2
950-999.....	6			6
1,000-1,049.....		2 (b)		2
1,050-1,099.....				
1,100-1,149.....	4			4
1,150-1,199.....				
1,200.....	3			3
Total	21	46	5	72

(a) \$650

(b) Teachers of special subjects.

found that, even after deducting the principals' bonuses, the average salary of the upper grade teachers is higher than that of the lower grade teachers. In 1916-17, the average salary for each year diminished regularly, with but two exceptions, from the 8th grade to the 1st. The difference between the maximum average (8th grade) and the minimum average (3rd grade) was \$71.81. As to the grades whose teachers have received the largest increases in the past ten years, we may say in general that the larger increases have been received by the upper grade teachers. Teachers of the kindergarten, 1st, 2nd, and 3rd grades have increased in average salaries in the past ten years a little over \$150. The average salaries of teachers from the 4th to the 8th grade have increased more than \$200. Of course, this matter of average salaries and of increases in average salary as

applied to the different grades is affected by the number of teachers of long experience in any given grade.

In order to eliminate this variable factor, Table 29 is given to show the salaries for the past eleven years as received by all the teachers now in service who were also in service during the first year of the period. This provides opportunity for ten increments for each of these teachers and indicates the salary policy for teachers who remain in service a long time. In the high school there are but four teachers now serving who were on the force in 1906-07. Their salaries in the first year of the period were respectively \$902.50, \$712.50 (two) and \$807.50. Three of the four are men and are now receiving \$1,200, and the fourth is a woman, who, at the beginning of the period, received \$712.50, and is now receiving \$950.00. The average salaries of the four high-school teachers in 1906-07 was \$783.75. The average rose in the next five years to \$950, an increase of \$166.25, or 21%. In the following five years a further increase in the average salary occurred, amounting to \$187.50, or 20%. In the entire ten years, therefore, the increase in the average salaries of these four teachers was \$353.75 from an initial average of \$783.75. This was an increase of 45%.

In the elementary schools, twenty teachers served throughout the entire period from 1906-07 to 1916-17. Their average salary in the first year of the period was \$472.83. It rose steadily, until at the end of five years it was \$565.73, representing an increase up to and including 1911-12 of \$92.90, or 20%. During the second five-year period, the average increased from \$565.73 to \$676.50, an increase of \$110.78, or 20%. During the entire ten years, therefore, teachers who have been in the service continuously in the elementary schools have, on the average, increased their salaries \$203.67, or 43%. This may be compared with the increase of \$353.75, or 45%, for the high-school teachers.

Considering the high and elementary-school teachers together, if the increase in salary had been equally distributed to all who have served in the same position for ten years, each would have received in 1916-17 \$228.69 more than in 1906-07. In other words, the teacher who has served in the city of Janesville for ten years has increased his or her salary on an average \$228.69, or 44%, from an initial salary of \$524.65.

TABLE 29.—Average Salaries of Teachers Having Served Continuously in the Same Positions from 1906-07 to 1916-17, Inclusive.

	Number of teachers	1906-07	1907-08	1908-09	1909-10	1910-11	1911-12	Increase in 5 Years	
								Amount	Per cent.
	1	2	3	4	5	6	7	8	9
High-school teachers.....	4	\$783.75	\$856.25	\$902.50	\$914.38	\$936.63	\$950.00	\$166.25	21.2
Elementary school teachers.....	20	472.83	496.73	519.45	531.38	551.00	565.73	92.90	19.6
All teachers.....	24	524.65	556.31	583.48	597.71	615.52	629.77	105.13	20.0

	Number of teachers	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17	Increase in 5 years		Increase in 10 years	
								Amount	Per cent.	Amount	Per cent.
	1	2	3	4	5	6	7	8	9	10	11
High-school teachers.....	4	\$850.00	\$1,026.88	\$1,050.00	\$1,075.00	\$1,137.50	\$1,137.50	\$187.50	19.7	\$353.75	45.1
Elementary school teachers.....	20	565.73	581.40	620.50	640.50	669.75	676.50	110.76	19.6	203.67	43.1
All teachers.....	24	629.77	655.65	692.08	712.92	747.71	753.33	123.56	19.6	228.69	43.6

TABLE 30.—High School Organization and Salary Costs by Subjects.

Subject	No. of positions	Total salary cost	Class Periods Per week		No. of classes	Total class registers	Average class size	Student Periods Per week		Cost per student per week	Cost per 100 student periods
			Total	Avg. per position				Total	Avg. per position		
	1	2	3	4	5	6	7	8	9	10	11
English.....	3.13	\$2,912.50	90	28.8	18	440	24.4	2,200	702.9	1.32	3.55
Mathematics.....	2.93	2,711.22	80	27.8	16	405	25.3	2,025	691.1	1.34	3.60
Latin.....	1.17	1,112.86	35	29.9	7	125	17.9	625	534.2	1.78	4.78
Greek.....	0.14	135.71	5	35.7	1	6	6.0	30	214.3	4.52	12.15
German.....	0.40	380.00	10	25.0	2	44	22.0	220	550.0	1.73	4.65
History.....	2.09	2,101.43	55	36.3	11	263	23.9	1,315	702.3	1.60	4.30
Physical Training.....	2.20	2,170.00	75	34.1	15	309	20.6	1,545	620.2	1.40	3.76
Commercial.....	0.32	270.45	7	21.9	4	176	44.0	312	981.3	.86	2.21
Agriculture.....	0.66	800.00	20	30.3	4	70	17.5	350	530.3	2.29	6.16
Science.....	2.33	2,403.33	73	31.3	15	398	26.5	1,840	789.7	1.31	3.52
Domestic Science.....	2.40	1,935.00	80	33.3	17	461	27.1	1,736	723.3	1.11	2.98
Manual Training.....	2.25	2,475.00	90	40.0	9	124	13.8	1,240	551.1	2.00	5.33
Total.....	20.02	\$19,407.50	620	31.0	119	2,521	23.7	13,440	671.3	1.41	3.87

High School Costs

The programs of the teachers in the high school were obtained, and from them a number of studies of the organization of the high school were made. A few of these will be presented in concluding this chapter. In Table 30 are shown some of the significant facts concerning the work of the high school, distributed according to the subjects taught. The number of positions required to teach each of the subjects is given in column 1. The fractions arise from the fact that several teachers instructed in more than one subject. From this column it appears that the largest amount of teaching service is devoted to English work and that Mathematics requires nearly as much. The time of rather more than two teachers is required to do the work in each of the following subjects: History, Manual Training, Domestic Science, Commercial work, and Science. Somewhat more than the time of one teacher is devoted to instruction in Latin. The remaining subjects occupy less than the time of one teacher.

In column 2 of Table 30, the total salary cost for each subject is given. Taken in connection with the total salary cost for all subjects, this serves to indicate from another point of view the degree of emphasis placed on each subject. Nothing fundamental, however, can be shown concerning the cost of each subject from the entries in this column. Consideration must be given to the amount of instruction—i. e. to the number and size of the classes taught in each subject.

Column 3 shows something concerning the amount of service rendered by the teachers whose positions and salaries are entered in column 1 and 2. In English we observe that the time of the 3.13 teachers, whose total salary amounted to \$2,912.50, was occupied in the classroom for 90 periods per week. In column 4 we have the quotient obtained by dividing this by the number of positions, yielding 28.8 as the average number of class periods per week in English for each position.

In column 5 are shown the number of classes which recite in each subject, and in column 6 the total registers of these classes. By dividing the entries in column 6 by those in column 5, we obtain the average number of pupils per class in each subject. This is a significant figure and indicates from one point of

view the economy of organization, and from another the liberality in the provision of teachers to carry on the work.

In column 8 we have the best unit in terms of which to express either efficiency of organization or the unit cost—namely, the student-period per week. The student-period per week is one student taught a period a week throughout the year. A class of 20 pupils meeting five times a week would yield 100 student-periods. At Janesville the class period is 40 minutes, and the school year 1916-17 consisted of 37 weeks (or, to be exact, 186 days.) Column 8 shows that in the English Department the 3.13 teachers taught in the aggregate 2,200 student-periods per week, or (column 9) an average of 703 student-periods for each position. This is a significant figure in reaching any conclusion about efficient organization. It takes into account both the number of class periods for each teacher and the size of the classes taught. The larger the number of student-periods per position—i. e. the larger the entry in column 9 for any given subject—the more economically is work in that subject being conducted.*

If we divide the entry in column 2 (salary cost) by the entry in column 8 (number of student-periods) for any given subject, we obtain the salary cost for each student-period per week. This is a valid figure for making comparisons to show the expense of conducting the work in the various subjects, except so far as the subjects differ in the type of teaching required. English is costing \$1.32 per unit of work (i. e. per student-period per week); Mathematics is costing \$1.34; Latin costs appreciably more; while Greek costs more than three times as much. German and History are on a par with Latin, while Commercial subjects cost a little more than Latin or Mathematics. Physical Training is relatively inexpensive on account of the large classes which may be taught in it (see column 7); while in Agriculture the cost is higher because the classes are small. The cost in Science and Domestic Science is low, both because the classes are large and because the teachers teach a large number of periods per week. In Manual Training the cost is relatively high, because, although the teachers teach a large number of periods a week, the classes are very small.

* One important distinction, however, must be made. In the Sciences, and in such subjects as Manual Training and Physical Training, the number of periods ought to be larger than in the case of subjects requiring outside preparation and having no laboratory work, such as English, Mathematics, History, and the Languages.

Among the possible economies to be effected in the high school are (1) the dropping of Greek, which, since it is offered to but a single class consisting of six students, hardly justifies its existence, and (2) the combining of classes in Agriculture and also in Manual Training.

The cost data given in column 10 are comparable as between subjects taught in the Janesville high school. The unit is the student-period per week, the period being 40 minutes. Of late, several studies of high school organization have been made, in which a unit of this kind has been used. Two of the best of these studies are by Prof. H. G. Childs* and Prof. J. F. Bobbitt.** Their statements of cost are given as amounts "per 100 student-hours." The student-hour is a student taught one 60-minute-hour—not an hour *per week*. A class of 20 students meeting five hours a week for the year (37 weeks) would represent 3,700 student-hours. At Janesville the recitation periods are forty minutes. Column 11 of Table 30 shows the cost per 100 student-class-periods of forty minutes each. For example, in English, the cost of each 100 forty-minute periods was \$3.55. Since Childs and Bobbitt both use the 60-minute period, this amount must be increased by one-half before comparison with their figures can be made. Table 31 shows the resulting Janesville figures, together with the median figures as given in the two studies referred to. In his tables, Childs gives data for three groups of Indiana cities. His "Group II" consists of cities having 200 to 500 high school pupils; and the figures given in Table 31 are for this group. Bobbitt's data are for schools all but four of which belong to the North Central Association.

Observe that for the high school as a whole, the salary cost per 100 student-hours was \$5.81 at Janesville, and that this is 17 cents more than the cost for the middle city in Childs' group, and 39 cents less than the cost for the middle city in Bobbitt's list. Similar comparisons may be made for the cost of each subject. In general, Janesville's cost is not high, except in Agriculture, History, Latin, and German.

* Third Conference on Educational Measurements, University of Indiana, 1917, page 126.

** "School Review," volume XXIII, No. 8, October, 1915, page 505.

In the matter of the size of classes, Table 31 shows that the children at Janesville are being taught in rather larger groups than is typically true in the cities listed by Childs and Bobbitt. On the other hand, the number of class hours of work per teacher is relatively low, as is the average number of student-hours per week for each teacher. Finally, the average salaries at Janesville are higher than is the case at the median cities in the two lists with which we are making comparison. Thus, of the three principal elements entering into the matter of cost, namely size of class, hours of teaching per week, and average salaries, Janesville is economical in one, and is relatively uneconomical in two. It is probable, however, that further economy in salaries would detract from the quality of the work. On the whole, Janesville does well from all these material points of view in High School organization and support.

SUMMARY.

1. *The Problem*

Janesville, a city of little more than fourteen thousand inhabitants, has about 3,800 persons between the ages of four and twenty, and about 2,000 between the ages of six and fifteen. About 500 of its children attend parochial schools, and about 2,500 the public schools. Of the latter, about 570, including 108 nonresident tuition pupils, are in high school. The elementary schools are decreasing, and the high school is increasing in enrollment, although neither movement is rapid. The city does not have to meet the problem of providing for material increases in school population.

2. *Means for Solving the Problem*

In 1916 the assessed valuation of property at Janesville was \$15,609,631, and the true valuation was \$16,981,097. The wealth per capita on the latter basis was \$1,184, which was highest among the Wisconsin cities of its class. Its wealth per pupil in average daily attendance was \$8,646, which placed it second among the same cities. It has, therefore, large resources from which to meet its educational problem—nearly, if not quite, twice as large as some of the cities with which it has been compared.

The receipts of the Board of Education have increased 21% in four years. The State grants amount to about 16% of all the receipts, and the proceeds of city tax to about 77%. The

amount from the latter source was less per pupil enrolled than in any except two of the twenty middle western cities with which comparison was made in Table 10. The middle city made 40% more money available for schools than did Janesville.

3. *The Way in Which the Problem is Being Solved*

(a) **Taxes and Tax-rates.** The total tax-rate is lower than in any other Wisconsin city of the same population class, and it is low largely because the school tax-rate is low.

(b) **Analysis of City Expenditures.** According to the reports of the Tax Commission, Janesville spends less money per capita for *all city purposes* than any other Wisconsin city except one in its population class. Some of its city departmental expenditures were low, and others were high. Its school expenditures *per capita* of the population were outranked by five of the eight other Wisconsin cities. That this low expenditure per capita was not due to financial inability is evident from the fact that the rank of the city in expenditures *per \$1,000 of wealth* was even lower than it was on a per capita basis. Indeed, its rank on the wealth basis was lower than that of any other city. The *school* expenditures in relation to wealth were, likewise, markedly less than those of any other of the Wisconsin cities. On the better basis of children enrolled in the public schools, the amount spent at Janesville was much nearer the minimum than the maximum amount for all the cities.

(c) **Analysis of School Expenditures by Items.** When the payments for the past five years are separated into the purposes for which the money was spent, it is shown that the largest increase has been for high-school teachers' salaries. The expense for janitors' salaries, for fuel, and for maintenance, are unusually high, when these are expressed on a unit basis. On a similar basis, the expenditures for teachers' salaries are relatively low, and this may be a serious defect. There is good reason for thinking that in spending school money the city is not distributing it to the fullest advantage.

(d) **Analysis of School Expenditures by Schools.** Among the elementary schools, the cost per pupil varies greatly, being twice as much (1916-17) in one school as in another. In general, the larger the school the smaller the cost. The smallest school (Jackson) is the most expensive. If it were closed and

the pupils transported, the city would save money, and the children would be better taught.

(e) Elementary School and High School. The cost per high-school pupil is nearly twice that per elementary school pupil. The latter cost, however, is growing more rapidly, not only because the expenditures are increasing in the elementary schools, but also because the enrollment is decreasing. In the high school both expenditures and enrollment are increasing, and hence the cost per pupil shows little increase. Evidence from teachers' salaries tends to show that Janesville is spending an unusually large proportion of its school money for the high school. The elementary schools are relatively under-financed.

(f) Teachers' Salaries. Salaries have been increasing for the past ten years. During that period the average salary of all teachers has increased \$240, or 48½%. Salaries of elementary school principals are hardly existent, being represented by bonuses given to the teachers of the highest grade in each building. No real supervision can be expected. The cost for the non-instructional work of teacher-principals is about \$735 per year. The average salaries of high-school teachers rank well, being about 50% higher than the average salaries of elementary-school teachers. The latter, however, are little, if any, better than the salaries in cities throughout the country having populations between 10,000 and 25,000. Most of the cities in progressive states pay more—some a great deal more. Although the variation among salaries is not conspicuous, the upper grade teachers in elementary schools are paid more than the lower grade teachers, and the larger increases in recent years have been in the salaries of teachers above the third grade. The increase in the average salary of high-school teachers who have been continuously in service for the past ten years has been \$353.75, or 45%. The corresponding increase for elementary-school teachers who have held the same positions for the past ten years has been \$203.67, or 43%.

(g) High School Costs. On a unit basis, certain subjects are costing more in terms of teachers' salaries than others, and, by comparison with data for other cities, are apparently costing more than is usual. Such subjects are Greek, Latin, German, History, and Agriculture. The classes in the high school at Janesville are, on the average, rather larger, though

not conspicuously so, than the typical classes in those cities from which data are shown. The average salaries are rather high, while the number of class hours of work required of the teachers is not excessive. On the whole, the high school, though it might profit by some minor adjustments, is from the point of view adopted in this chapter, creditably organized and supported. There are more evidences of weakness in the elementary schools.

V BOARD OF EDUCATION

The city of Janesville has shown itself to be among the more progressive cities with respect to its form of city administration. It has at present a commission form of city government. Under this system of government the city's welfare is in the hands of men elected from the city at large. These men are elected in the interests of the entire city rather than in the interests of a particular ward. This form of city administration is generally noted for its efficiency. Men are selected with reference to their ability to serve the city without regard to any artificial ward boundary lines within the city. The fact that two able men live in the same ward does not automatically bar one of them from eligibility to membership on the commission. Janesville is to be commended on the progressive step which it has taken with reference to the administration of its city affairs. But strange as it may seem the city has not adopted a similar policy with reference to its schools. The present method of selecting school board members is antiquated. The city charter provides for the election of two members at large and one member from each ward, making eight in all. This out-of-date method of selecting a board of education should be abolished at the first opportunity.

Selection by wards cannot be justified under the pretense that the interests of a given ward will be better taken care of under a system of ward representation. Ward interests see things with one eye and that only partly open. It must not be inferred from this that the present board has placed ward interests above the interests of the city at large. The board as a group is public spirited and aims to serve the city to the best of its ability. But there is no assurance that such a state will continue. The point to be considered is that the present form of organization lends itself well to ward manipulation and in the hands of a less sincere group of men might prove disastrous to the city's best educational interests.

Another condition resulting from ward selection which is perhaps equally bad is that which automatically prevents the selection of some of the city's most able men for membership

on the board. Not infrequently in many cities a number of the most able men in the community reside in the same section of the city. Under a ward system of selection, however, not more than one of these at a time can become a member of the board. Janesville now selects two of its board members at large. It should select all of them in that manner.

The electors of the Janesville school district may provide for the election of members of the board at large under the provisions of the general laws of the state if they so vote. Under the provisions of section 925—113 of the General City Charter Law electors of the school district may at a special election, called and held pursuant to the provisions of the present city charter law governing special elections vote to change the present system. This would give the city a board of seven members. It is recommended that the Board take the necessary preliminary steps to submit this question to the electors at a special election as authorized by law. A form of ballot similar to the following and in accord with sections 925—113m of the General City Charter Law should be used.

“Shall the board of education be elected in accordance with section 925—113n”

Yes -----

No -----

The Organization of the Board

In the past the board has been organized with one of its members as president and with the clerical duties performed by a paid secretary. The secretary in the performance of his duties is independent of the superintendent except as each has cooperated with the other of his own accord. The board has had four standing committees, as follows: finance; buildings and grounds; teachers; and textbook, equipment and supplies. The newly organized board in accord with suggestions made by members of the survey has decreased this number and now has a single committee on teachers. Regular meetings of the board are held each month. The volume of business demanding the attention of the board is not large in point of importance but it is frequently time consuming.

Committees

With a small board there is little need for standing committees. The present board is to be commended for having reduced the number of these. Too often committees undertake work which should be left to the professional judgment of those whom the board employs to manage its school system. On questions of importance the board as a whole should act.

When important matters of policy such as a building program, methods of financing the schools, or the extension of the scope of the schools activities arise it may be advisable to appoint temporary committees with whom the superintendent may discuss in a preliminary way his proposals in these matters of policy. The function of a committee in any case however should be that of advising with the superintendent, giving him the benefit of its group judgment and supporting him when a proposed policy which it has considered is placed before the board. Under the regulations previously in effect the most important committee was that on teachers. Recommendations on the election of teachers were made to the committee by the superintendent and then by the committee to the board. This is not the most satisfactory method of procedure. The superintendent is employed because of his professional ability to judge the fitness of teachers and to him should be left entirely the matter of recommending them. He and not the committee assumes the responsibility for their success or failure. The function of the committee is more properly that of discussing with the superintendent the schedule of salaries and the number of teachers to be employed.

The Relation of the Board and the Superintendent

The superintendent is the chief executive whose services the board purchases because of his professional training and experience. He is the person upon whom falls the responsibility for the successful administration of the school system. His position is akin to that of the general manager of a business corporation and the board constitutes the directors. In successful business concerns the directors look to the general manager (1) to propose new policies, (2) to carry them out when adopted by the board, and (3) hold him responsible for the success of the system. In a well-administered school system the position

of the superintendent parallels that of the general manager of a business enterprise. This means then that the board must give the superintendent adequate authority properly to conduct the schools. He must make such recommendations as he deems wise for the further development of the schools and the board must hold him responsible, through the reports it demands of him and his assistants, for the success of the system.

The present board is to be commended for the confidence it has reposed in the professional judgment of the superintendent. Good results can be secured only when his authority is commensurate with his responsibility. One of his most important duties is the selection of teachers. In this his judgment must be trusted. Few of us would care to ride on trains whose crews were selected by the board of directors. Only those judged most fit by the expert division superintendents are trusted to man the crews. Neither should a board of education attempt to select the teachers who guide the train of the child's life. The superintendent's judgment of merit should be the sole consideration in the selection of teachers and other assistants.

In return for the confidence reposed in the superintendent's ability to suggest lines of action and to carry them out when authorized by the board, it should demand an adequate accounting of past performances. Through such a report it is able to assure itself that the schools are well-conducted. It should require detailed and systematic reports based upon facts and so interpreted as to indicate where the schools have succeeded and where they have failed together with the reasons therefor. These should be the subjects of discussion at board meetings and its actions should be based upon such reports.

The Selection of Teachers

It is the practice of the teachers committee to accept almost without exception the recommendations of the superintendent. This is commendable. There is however no guarantee that the superintendent's choice must be selected. This should be a part of his contract with the board. A definite rule should be adopted and considered binding during the superintendent's term of office that no teacher will be elected except as recommended by him. Too often his recommendations to the committee must be made on the basis of application and personal

recommendations sent in by teachers in search of a position rather than on the basis of actual observation of the prospective teacher's classroom teaching. There is frequently the danger under this system that the superintendent will be placed in the position of purchasing a "cat in a bag" or choosing from those who make application in person. Too many local teachers are apt to be found in the system. The fact that more than two-thirds of the present corps of grade teachers are local teachers suggests that somewhere in the past a poor policy of selecting teachers has existed. The board will do well to authorize the superintendent to visit the actual classroom teaching of promising applicants at the board's expense.

Teachers are elected annually without designation as to the building or grade to be served. This is as it should be and leaves the superintendent free to assign and transfer teachers in ways calculated to permit them to render their best services.

Dismissals are recommended by the superintendent to the committee on teachers and then to the board. It is recommended elsewhere in this report that teachers be elected for a probationary period. When teachers have demonstrated their ability to teach successfully and have shown a capacity for growth it should not be necessary to reelect them each year. They should be assured of their position as long as they continue to exhibit these qualities.

The Annual Budget

The most important instrument through which the board may exercise its control over the destinies of the school children is the annual budget of expenditures. At present it is prepared by the secretary. The superintendent recommends the educational items to be included. In the judgment of the survey this method needs improvement. As stated previously the present secretary is independent of the superintendent. This should be changed, making the superintendent the single administrative head of the school system. The budget should then be prepared by the secretary under the superintendent's direction.

The proposed budget is the instrument then through which the superintendent should recommend new policies and through which he should be held responsible for educational results. The budget is the one instrument through which the board may

exercise its legislative functions knowing definitely what policies are to mean and what is to be achieved with the money appropriated. The board should require all estimates to be in terms of unit specifications accompanied by such data as may be necessary to show whether increases or decreases for any given item are due to changes in cost, in quality, or in amount of materials or service to be purchased. Expenditures for each major item should indicate the per cent which it represents of the total expenditures accompanied by similar figures for the present and preceding years, and for other cities of the class of Janesville. All expenditures for such items as textbooks, supplies, administrative control, supervision, instruction, fuel, janitor's service and supplies should be shown in per pupil cost terms. The proposed budget should be accompanied by data showing the taxable wealth per child, the amount of indebtedness, the tax rate for all purposes and for schools compared with similar expenditures in other cities. Such analytical data should be accompanied by graphic representations to show the full effect of the proposed expenditures. The proposed budget should be accompanied by brief statements of explanation in all instances where significant changes from previous years are proposed.

Adopting a Building Program

One of the most important matters now facing the board is the adoption of a building program. In this it should look to its superintendent for guidance and all architectural plans for buildings should be first approved by him to insure their conformity to modern standards of schoolhouse construction.

The Duties Which the Board Should Perform

From what has been said above it may be feared that the board will be only a "rubber stamp" for the superintendent's program. On the contrary it will find many matters of importance demanding its attention. An examination of the minutes of the board suggests that the board and its committees are now devoting considerable attention to matters which might well be disposed of by executive officers. For the guidance of the board the duties which in the opinion of several hundred competent judges are among those most worthy of the boards attention are given here.

1. Select the superintendent and support him in the discharge of his duties.
2. Pass upon the annual budget for maintenance prepared by the superintendent and his assistants.
3. Require and discuss the reports of the superintendent and his assistants concerning the progress of the schools in terms of the achievements of pupils, teachers and supervisors.
4. Require and consider the report of the business transacted or pending and of the financial status of the system.
5. Appoint upon nomination and recommendation of the superintendent teachers, principals and supervisors.
6. Advise with the superintendent, affording a group judgment on his recommendations for extensions or readjustments of the scope of educational activities.
7. Represent the needs of the schools before the city council, the legislature or the public.
8. Debate and pass upon recommendations of the superintendent for additional capital outlays and determine the means of financing them.
9. Pass upon architects plans, approved by the chief executive and his assistants, for buildings that have been authorized.
10. Determine, after consultation and discussion with the superintendent, the schedule of salaries.

The most important of these is of course the first mentioned, that of selecting the superintendent and supporting him in the discharge of his duties. Such matters as giving ear to complaints and communications should occupy little of the board's time.

VI CENSUS, ENROLLMENT, AND ATTENDANCE

CENSUS AND CENSUS-TAKING

A census of the school children between 4 and 20 years of age is taken on June 30th of each year in each Wisconsin school district. This census has two main uses. It is taken primarily as a basis for distributing state money, which is apportioned according to the number of school children in the state. Another possible use of the school census, to which it is not put as frequently as would be desirable, is that of checking up compulsory school attendance at the beginning of and continuously during each school year.

The Janesville census procedure was studied from three points of view,—(1) the completeness of the census taking, (2) the adequacy of present methods of taking and recording, and (3) the actual and the possible use made of the census.

The 1914, 1915, and 1916 census reports were studied. Those for 1914 and 1915 were found bound in alphabetized form. The 1916 census was not bound nor alphabetized. All three census reports were found to omit considerable data. Frequently the age or date of birth was lacking, and sometimes even the name of the child.

The following table shows the number of children of various ages in the three census reports. The accompanying curve shows these findings graphically, with curves for the three years superimposed to keep a given group of children in each of the three years on a given line.

	1914	1915	1916
Total	3338	3325	3066
4 years old	199	180	162
5 " "	235	195	184
6 " "	210	231	196
7 " "	219	210	226
8 " "	202	231	203
9 " "	234	198	209
10 " "	232	222	196
11 " "	213	238	218
12 " "	226	213	226

			1914	1915	1916
13	"	"	217	218	200
14	"	"	211	208	201
15	"	"	184	211	165
16	"	"	204	178	183
17	"	"	188	214	172
18	"	"	206	190	173
19	"	"	158	188	152

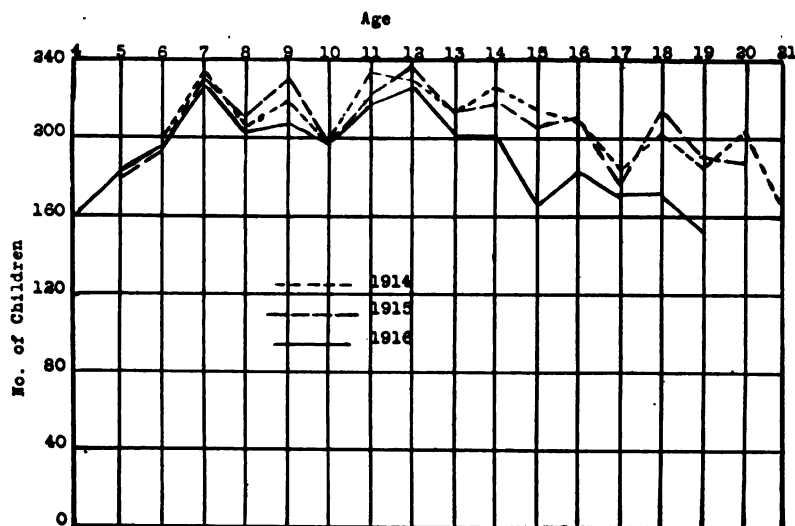


Fig. 1. The Number of Children of Each Year Age as Indicated by the School Census for 1914, 1915 and 1916.

Note: Age headings are as of the 1916 census. E. g., children 6 of 1914, and 7 of 1915, are grouped on the 8 year line of 1916.

From this table and curve it seems evident that there is considerable error in Janesville census records.

For example, it is not probable that there are considerably fewer children four and five years old than eleven and twelve years old, yet this is what the census seems to indicate.

In the 1916 census, the age groups from 15 to 19 inclusive show a large degree of variation from the corresponding age groups for 1914 and 1915.

Further to analyze the probability of the Janesville census record's being accurate, comparison was made between the proportion of school census to total population, in Janesville and in the cities of Wisconsin in general. It was found that this

proportion in cities of the state in general is 31.8%. In Janesville it is 27.4%.

It is, therefore, concluded that the Janesville census in all probability shows a total that is smaller than the number of the children of school age in the Janesville district.

A like conclusion would be inevitable from a study of present methods of census taking and recording. This work has been entrusted to a single individual qualified by an extensive experience and acquaintance with Janesville and its residents. It has not been felt necessary to make a complete house-to-house canvass. The census report of the former year has been used as a base; names known to be "dead" have been stricken out, and new names entered on the basis of memory and somewhat random records. The ledger method of recording the census has been used, by which the name of each child in a given family is written on one line of a page.

This method of census taking and recording is obviously obsolete and inefficient. It makes it impossible to record completely, to alphabetize accurately, or, most important of all, to use the school census in administering the compulsory attendance.

The Janesville school authorities have determined to change to the card index system of census taking. This course has the unqualified approval of the survey staff.

A sufficient number of enumerators should be employed to take the census. Preference should be given to principals of ward buildings who are in Janesville through the summer or to teachers in the various schools. Remuneration should be made probably at the rate of four cents per child enumerated. Each enumerator should be given a blank card form to ascertain that all necessary data is secured, and the manner of taking the census should be thoroughly discussed before enumerators go to work.

Upon receipt at the central office of notes of enumerators, census cards should be filled out. This procedure will make it possible to use the census records for administrative purposes.

At present, as has been intimated, the Janesville census has no function beyond that of a preliminary to reporting the school population to the state office. Its local use as a check, on compulsory attendance has not been demonstrated, and indeed,

such use would be impossible under past conditions and methods.

It is recommended that the census cards for those children between the ages of 7 and 16 be taken from the files by attendance officers at the beginning of the school year, and that these cards be sorted by districts within the city. They should then be checked carefully to determine the enrollment or nonenrollment of each child and the cases of those not enrolled should be investigated. It would probably be well to make a separate group of children 14-16 not enrolled, for the director of the industrial school, and of children who have completed the eighth grade, for the high school principal. Cards may be kept in these groups through the school year, for convenience in use. If a separate alphabetized census file is desired, it will be necessary to fill out cards in duplicate.

ENROLLMENT AND ATTENDANCE

In the public schools of the state, the proportion of children from 4-20 years of age enrolled in school is 57% (1915-16). Including incomplete parochial school figures, it is 63%. In the cities, the proportion enrolled in public school is 55%.

Comparison of this figure with the records for Janesville shows that the Janesville schools are serving an adequate proportion of the population of school age. The per cent of children enrolled in public school (1915-16) is 60.4. Including parochial school enrollment, it is 73.5%. A factor which inflates somewhat the figures for Janesville is the nonresident high school enrollment, which is comparatively large. This factor, however, is fairly constant throughout the state, and will not affect the fact that Janesville stands out well in the proportion of school population enrolled in school.

The high school enrollment has been increasing rapidly, having gained 19% in the past four years. In 1915-16, it was 21.8% of the total Janesville school enrollment. Omitting non-residents, this per cent becomes 18.7%.

If every pupil in the grades finished 12 grades in 12 years, the high school would contain $33\frac{1}{3}\%$ of the total school enrollment. This ideal condition is of course not possible practically. The Janesville figure for high school to grade enrollment ranks high with the state as a whole, where the figure is 10% (cities, including nonresidents, 17%).

The following table gives census and enrollment data for Janesville 1915-16. State data are to be found in the Biennial Report of Wisconsin Schools for 1914-16. The Janesville figures are those reported to the state department office.

	1911-12	1912-13	1913-14	1914-15	1915-16
Census 4-20.....	3,837	3,806	3,827	3,824	3,799
Total enrollment.....	2,480	2,567	2,517	2,470	2,298
Grades.....	2,059	2,142	2,073	1,997	1,796
	(81%)	(83.5%)	(82.3%)	(80.8%)	(78.2%)
High school.....	421	425	444	473	502
	(19%)	(16.5%)	(17.7%)	(19.2%)	(21.8%)
Per cent of enrollment to census.....	64.7	67.4	65.7	64.6	60.4

Parochial school enrollment, 1916-17—524.

SCHOOL ATTENDANCE

The pupil enrollment in Janesville schools is a high proportion of the census. The attendance, on the other hand, is poor in comparison with state average or general attendance standards. It will not profit a child to be enrolled in school if he fails to attend. There is an obvious need for revised attendance supervision in Janesville. This need and suggestions for the manner of meeting it are outlined in the following paragraphs.

In 1915-16, the proportion of average daily attendance to enrollment in Wisconsin cities was 88%. In Janesville, this proportion was as follows:

	Enrollment	Attendance	Proportion
1911-12	2480	2048	82.6%
1912-13	2567	2146	83.5%
1913-14	2517	2099	83.5%
1914-15	2470	2068	83.7%
1915-16	2298	1964	85.4%

This attendance figure for Janesville means that every day the schools were in session a considerable number of children were absent. Some of the difference between 2298 and 1964 can be accounted for through pupils removing from the city and others entering the city after the opening of the schools in September, but only a portion. Certainly such a large number of absences daily from public grades and high school alone without counting the problems of compulsory school enrollment, would form a

cause for the employment of a much more adequate attendance system than that at present in use in the Janesville schools. The experience of Kenosha among other cities, in the value of adequate attendance supervision, cannot fail to convince one of the vital necessity of this phase of school administration.

A full-time attendance officer should be employed for a twelve-months year. For the school year, attendance duties will occupy this person's full time. This officer should supervise the taking of the census. During the remainder of the summer months, the attendance officer will be employed at various administrative duties, such as helping in the compilation of the annual report to the state office, keeping current track of the arrival and departure of resident families; working to influence dropped pupils to reenroll in school or eighth grade graduates to enter high school, and otherwise aiding in planning for the school procedure of the following year.

At the beginning of the school year the enrollment should be checked by the attendance officer through the use of the census cards and all cases of nonenrollment should be investigated within the first week of school. This work will also be done currently throughout the school year for families newly arriving in Janesville, and for children who may drop out of school.

In checking daily school attendance, the cooperation of teachers and principals is vital. Within ten minutes of the opening of each session, each teacher should send to her principal a list of all the children who are absent from her room, together with reasons where these are known. The attendance officer should call each building in turn at a specified time, and receive all names, with facts where possible. The list of absences should then be made the basis for investigation, to be made by telephone where convenient, and by personal visit where necessary or advisable.

Through the year the attendance officer should acquire as extensive attendance data as possible. This should be compiled, analyzed, and studied for variation by days, weeks, or months, causes of absence, etc. Graphic representations should be made, and all material used for talks before women's clubs, parent-teacher associations, and teachers' meetings, and for articles in local newspapers.

In order to discharge his or her duties successfully, the attendance officer should be a person fitted to command the re

spect and cooperation of school and community. This person should have some teaching experience, preferably, and should be able and ready to give talks in public concerning the work of the attendance department. Experience in some form of social service is almost indispensable, and to this list of qualifications can be added training and experience in nursing and public health work. The health side of attendance work can, however, be carried on separately if desired.

NONRESIDENTS

The laws of Wisconsin compel any school district not maintaining a high school to pay tuition for any local graduate attending high school in another district. Under this law, there are at present over 10,000 nonresident pupils in Wisconsin high schools, constituting about 21% of the total high school enrollment.

The Janesville high school is nearest and most convenient to 38 rural school districts, comprising a territory of over 150 square miles. The proportion of nonresident to total enrollment in 1916-17 was as follows:

Of 173 freshmen	27 or 16% were nonresident
Of 150 sophomores	27 or 18% were nonresident
Of 101 juniors	21 or 21% were nonresident
Of 81 seniors	15 or 19% were nonresident
Of 65 graduating seniors	11 or 17% were nonresident
Of 505 high school students	90 or 18% were nonresident

This puts Janesville slightly below the state average for nonresident enrollment. To determine whether it would be easily possible to attract more rural school graduates, a study was made of the graduating classes of 1914, 1915, and 1916 in the 38 districts tributary to the Janesville high school.¹

There were in the classes of 1914, 1915, and 1916, 119 diploma graduates from the rural schools in the Janesville high school territory. Of these 119,

64 or 54% attended Janesville high school one-half year or more
3 or 2% attended county training school
14 or 12% attended high schools other than Janesville
5 or 4% attended 9th or 10th grades in state graded schools
2 or 2% attended country school another year
31 or 26% attended no school after graduation

¹ "Diploma" graduates only are included; that is, those passing county examinations in common school branches.

Out of the 64 at some time enrolled in the Janesville high school, only 44 were enrolled during the school year 1916-17. This means that 20 of the 64 dropped out within 3 years or less. It also shows that only about 60% of the nonresident population of the Janesville high school in 1916-17 was drawn from the territory directly tributary to it.

TWO RECOMMENDATIONS RISE FROM THIS ANALYSIS

1. Definite attempt should be made through every possible means to induce rural school graduates to come to the Janesville high school. Some of this work is carried on at present, but it may well be extended. Possible means include lectures, musical programs, agricultural demonstrations, and other meetings at rural centers and at Janesville, circulars and letters sent to the list of graduates, articles on the value of high school education, for local papers, and commencement talks at rural graduating exercises by high school principal and teachers.
2. Attempt should be made to keep nonresident pupils from dropping out of school. It is sometimes felt that rural pupils are more poorly prepared for high school work, and that this fact causes them to drop out. That this is not the case is indicated by a recent study¹ showing that rural pupils do as good or better work than city pupils in most secondary subjects, and by the fact that resident and nonresident eliminations in Janesville are practically equal. Too little effort to keep pupils in school is made, whether these pupils are resident or nonresident.

HIGH SCHOOL GRADUATES AND HIGHER SCHOOLS

A study was made of the high school graduating classes of 1914, 1915, and 1916, to determine what proportion went on to a higher institution of learning. It was found that graduates went on to school in the following proportions:

	1914	1915	1916
Total graduates	55	78	63
Total going on to school.....	25	38	20
Per cent going on to school.....	45%	49%	32%

¹ Davis: Educational Administration and Supervision, Mar. 1916.

Students went on to higher schools as follows:

	1914	1915	1916
University or college.....	21	29	16
Normal school.....	0	5	1
County Training school.....	3	0	2
Special school	1	4	1
	<hr/>	<hr/>	<hr/>
Total	25	38	20

This record of graduates entering higher schools is commendable.

At present no aids are given high school graduates in the way of choosing a vocation, or obtaining congenial employment. Such work as this is coming to be recognized as a legitimate function of the schools, and would constitute a progressive activity if carried on in the Janesville high school.

Part II

VII THE PROBLEM OF INDUSTRIAL EDUCATION

SOCIAL AND INDUSTRIAL CONDITIONS

Janesville is a city of approximately 15,000 population. Its growth during the decade 1900-1910 was comparatively small, and it is safe to assume that except for some unusual and unforeseen condition which may arise, its future development will not be marked by any rapid growth in population.

The number of wage earners reported in 1910 was 1451. This is approximately 10 per cent of the city's population. The city has an over-population of females, the ratio being approximately 9 males to 10 females. This is to be accounted for by the presence of textile factories employing chiefly female labor. Approximately 2000 of the city's population are foreign born. These are mainly of North European and Canadian stocks, English, German, Irish, Norwegian, and Scotch. No other nationality was represented by more than 50 in 1910. It will be seen that Janesville is primarily an American city, and it has no difficult problem of providing education for foreigners.

The city represents a combination of factors,—agricultural, commercial, manufacturing, and residential. It is situated in a fertile agricultural region less than 100 miles from two large cities, Chicago and Milwaukee. The natural water power afforded by the Rock river has been the direct cause of its development along manufacturing lines. The number of its manufacturing establishments as reported by the Federal Census in 1910 was 78. This number has probably been somewhat increased during the period intervening.

To determine the educational needs of such a city, it is quite obvious that any adequate survey of educational conditions must include a survey of the leading industries and occupations. Such a study is necessary in order to determine more fully the types of education needed. Whether a city school system shall adhere closely to the traditional subjects or whether it shall include in its program of education more liberal support of the so-

called "practical" subjects is a matter that must be determined by investigation of the city's industries and occupations.

A survey of the industries, however, should not be undertaken without a recognition of the fact that any type of education whether industrial or otherwise must take into account the interests of the individual, the community, and the state. The individual desires to prepare himself to do the things which he is by nature and inclination best fitted to do. The community desires boys and girls trained to meet the social and vocational needs of the city. It desires that they shall become citizens in the best sense, and that they shall contribute to the city's commercial and industrial development. These only in a broader sense are likewise the interests of the state.

Before recommendations can be made as to the kind of industrial education to be offered, another group of factors should be considered. This is the extent of the demand for specific lines of industrial training and the cost of meeting such demands. Wise economy requires that there be a reasonable demand for the specific type of training and that the type of work be of a kind which is socially worth while from the standpoint indicated in the paragraph preceding. If an occupation is undesirable as a vocation, then the school should be unwilling to train for it. This means that the type and scope of the industries whose needs are to be met must be considered. They must be considered from three points of view. These are: (1) the economic standing of the occupation itself, i. e., whether it is local or general; seasonal or fluctuating; its probable future; and the supply and demand of labor in that field; (2) the opportunity which it offers the worker, educational, financial, industrial and social; (3) the conditions which surround it, health, social, and moral.

With a view to discovering more definitely the instructional needs of the community, particularly in its industrial phases, nine representative factories were visited by members of the survey. These included a fountain pen factory, a shade factory, a tobacco factory, a machine factory, two machine shops, and three textile factories. These factories employ more than a 1000 workers. When this figure is compared with the city's total wage earners, it will be seen that the group of factories visited is fairly representative of the city's leading industries. The visits of the members of the survey staff included not only

an observation of the processes involved but included interviews and discussions with managers, foremen, and workers. In the course of these interviews, direct information was sought on such questions as the number of persons employed in various branches of the industry, the method of selecting employes, the requirements from the standpoint of knowledge and skill, the time required to learn the various processes, the wages paid, the hours and seasons of labor, the ways in which the workers spend leisure hours, the frequency with which workers change occupations, and their reasons for changing. In addition, the representatives interviewed were questioned as to the preparation which the schools might offer to those seeking employment in the particular occupation or industry. They were also questioned as to how the schools might help the worker on the job.

In addition to the visits to individual factories, a conference was held at the Commercial Club Rooms with representatives of various occupations, including both employers and tradesmen. At this conference, the members of the survey sought to discover the educational needs of the occupations represented.

INDUSTRIES

The industries of Janesville are about equally divided between those of a textile nature and those which might be classed as industrial or manufacturing. At the present time, there is a limited demand for skilled workers for the machine shops, foundry, woodworking factories, printing, and building trades. There is evidently a growing demand for highly specialized workers for the textile factories.

Textile Industries

Almost all of the work in the textile factories is done on automatic machines, which call for speed in operation rather than any high degree of skill or knowledge. In the opinion of the superintendents of the various textile factories visited, most machines can be operated at a high speed in from two to six weeks and any preparation that the school could give other than the general preparation now given would be of no material value in this work.

For the girls in the factory it was suggested, however, by some, that a knowledge of sewing might be the most helpful of

any training of a special nature. Others again said this would be of no material value.

Practically all of the work in the textile factories is done under the piecework system which pays by the quantity of work done. When this amount falls below a minimum requirement, it is concluded that the worker is not adapted for that particular operation or machine and an opportunity is given him to try out on some other machine before being counted a failure. Usually a girl works at the same machine or operation during her employment. A change of machine or work usually means a reduction, temporary at least, in the earnings of the individual. It is, therefore, to her advantage and especially to the advantage of the employer that she continue the work on the same machine.

It is but a few years before most of the girls in these factories marry and have a home of their own. Few of them are prepared for the duties of home life and homemaking. It is in this field that the school should offer training.

Machine Shop Industries

The machine industries of Janesville demand a number of skilled tradesmen. They also give employment to a large number of what may be called semiskilled workers, who are not tradesmen, but who have gained skill in two or three operations. The trained machinist is one who is skilled in the use of hand tools and capable of operating and understanding with a degree of skill any of the common machines in the industries.

Building Trades

The building trades are represented by about 190 workers. This number includes bricklayers, painters, carpenters, plumbers, etc. It may be said that Janesville's slow growth does not make any large demand for such workers.

Woodworking Trades

Two carriage factories and a table factory are the main woodworking concerns. They employ about 80 workers. The work may be said to be characteristic of such factories.

Specialized Industries

Such work as is carried on in most of the city's factories is highly specialized. Some of the work in fact may be said to

be almost purely local. Inasmuch as these specialized industries and in fact all of the factories, run all the year round, there is no problem of so-called seasonable employment.

In cases where the work is highly specialized the school can do but little to train the workers for the industry. Training in this case should be for the responsibilities of home and citizenship.

THE PRESENT MANUAL TRAINING WORK

Work of an industrial nature for boys in the Janesville schools begins in the seventh grade, and is continued through the high school. The work is required in the seventh and eighth grades but is elective in the high school. The work of the seventh and eighth grades consists in the making of a series of simple models in wood that vary in difficulty of processes as the pupil advances. These models are of the older stereotyped variety and do not embody the newer ideas of manual training.

The high school offers mechanical drawing, architectural drawing, advanced woodwork, wood turning, forge, and machine shop work. None of the work shows the development it should. There is also an almost entire absence of correlation between the various courses.

Pupils of the parochial schools in the seventh and eighth grades attend high school for manual training work, and receive the same privileges as the pupils of the public schools. Woodwork is the medium used in the seventh and eighth grades.

Standard of Work

As would be expected when conditions are considered, the standard of the work is below fair for most subjects. In one particular subject, however, (drawing) it may be classed as very good. The weakness of the work lies in the fact that there is no definite policy outlined, and no correlation between departments. Each teacher works out his own salvation independent of the others.

Reorganization of the Present Industrial and Manual Training Work

A reorganization of industrial and manual training work might be effected to the advantage of both the manual training department and the industrial school. The present woodworking

and drawing room in the high school could be made into one large woodworking room with the woodworking machines placed at the drawing room end. The present lathe and mill room could be used for an electrical room and metal working room. A rearrangement of the machine room would permit of the addition of more machines and a drawing and a woodworking room could still be maintained in the industrial school, where all drawing could be done and where the work for the seventh and eighth grades and the elementary industrial high school work could still be done. Pupils who are taking the advanced industrial work could receive this training at the high school. Much of the new equipment could be made by the industrial and high school classes.

The Teaching Staff

There are six teachers employed in the industrial and manual training work—two give full time to high school work; one one-quarter time to high school work and one one-quarter time to industrial work, and one one-half time to grades; two give all of their time to industrial work and one part time to industrial school work and part time to grade work.

The present system, whereby the industrial school is trying to build up an equipment for industrial school work in a building that is thoroughly inadequate for such work, will not permit of the best development of the work. The recommendation is offered that the industrial school and the high school combine equipments, and place a man in charge of each subject so that he may be able to teach classes all day. This will permit of high school and industrial school pupils getting the benefits that accrue from a combination of equipment and tools. Inasmuch as pupils have but to cross the street, no real objection can be raised as to the inconvenience of this method. This plan will permit of a considerable saving to the community and at the same time make for better development of high school and industrial school work.

The teaching staff in manual training and industrial work, while perhaps well-prepared for this work, lack forcefulness or "snap" in execution. This is probably due somewhat to the uninviting condition of the rooms and equipment, but perhaps more largely to the need of a capable director who should be held responsible for all industrial work.

Development Side of Manual Training and Industrial Work

There is need for greater emphasis on the development or initiative side of industrial work. At the present time, most of the emphasis seems to be placed upon the actual accomplishment by the hands. This does not permit of the broadest development of the work. There is also need for supervision of the industrial and manual training work. A policy or plan should be outlined and followed. Meetings and discussions of the work at stated periods by the teachers interested should be encouraged.

THE PRESENT EQUIPMENT FOR MANUAL TRAINING

Equipment in Drawing Room

The drawing tables are poor and should be replaced by new ones of a type that will house a drawing board and the instruments of the pupils at the same table where the pupil works. This type of desk will eliminate the necessity of furnishing large lockers to take care of the drawing boards and instruments and will permit of more space. This method also eliminates confusion at the beginning and ending of the class periods. The individual drawing equipment and material is purchased by the pupils.

Light

In the drawing room, according to the evidence of the teacher, some artificial light has to be used about fifty per cent of the time. In the woodworking room and machine shop, the light is also far below the minimum requirements.

Floors

The floor of the drawing room is of cement. This is a most undesirable type of floor for a drawing room. It is desirable that this should be covered with linoleum. The floors in the other rooms are satisfactory.

Equipment in Woodworking Room

The individual bench equipment is inadequate for the present needs. The general equipment also needs to be considerably increased. It is necessary also in connection with bench equipment to inaugurate an inventory system to keep account of all tools.

The woodworking benches are in a most discouraging condition. The tops in many cases are split and it is impossible to do work that calls for any degree of accuracy. The making of new benches would make a satisfactory problem for the woodworking class. This would be true also in making drawing tables for the drafting room.

Storing Problems

There is urgent need for space to store projects under construction. The present cupboard is totally inadequate for this purpose. Projects under construction have to be placed around the woodworking room from period to period. This takes up a great deal of valuable floor space. No provision is made for wood finishing. It is practically impossible to finish any woodworking project under existing conditions.

Mill and Lathe Room

A reorganization of the floor space in the mill room and the removal of all equipment that is not necessary would contribute materially to the floor space. The present wiring of some of the machines is not satisfactory, and probably does not conform to the State Building Code requirements. The circular saw and jointer should be turned around so that they will face the light. At the present time, these machines cannot be used to the best advantage. The element of danger is also considerably increased under existing conditions. A surfacer added to this equipment would be of inestimable value in saving the time of the pupils, thus permitting a broader development of the work.

Machine and Forge Room

This room has as much equipment as is wise to place in a room of this size. This does not mean, however, that it is over-equipped, but rather that it is not large enough for development through the new organization of the work. A rearrangement of the motors and shafting would permit of more light and increased efficiency. A system of taking care of tools and repairing them should be installed immediately.

The condition of the present equipment of tools and machines is fair but is inadequate for the proper development of the work. In the machine and forge work, there is evidently little correla-

tion with the other subjects. There seems to be little or no development work designed to make the pupils think.

Pupils taking the four-year industrial course should have opportunity to take machine shop work in the junior year so that the student may have the last year for special study in some one subject.

Blackboards

All of the blackboards in the classrooms are in poor condition. They should be replaced by slate boards at an early date.

System

There is need for the installation of a business-like system to take care of the cost of the projects made for the school and for the individual pupil. Such a system offers many practical problems in mathematics.

Physical Condition of the Rooms

There is need for vigilance on the part of the janitor to keep these rooms in an inviting condition. Removal of cases in the woodworking room which are little used, would afford more floor space. Calcimining the walls would contribute materially to the brightness of the rooms. This work of altering and repairing might well be done by pupils, with advantage to them and to the school.

EVENING SCHOOL COURSES

Courses offered in the evening school of Janesville may be divided into four groups: general; including arithmetic, Spanish, English and spelling: commercial; including penmanship, business English, commercial arithmetic, bookkeeping, stenography and typewriting: industrial; including shop mathematics, telegraphy, agriculture, chemistry, physics, gas engine work, electrical work, mechanical drawing, woodwork, machine work: household arts; including sewing, cooking, millinery: art; including sketching and painting, and china painting: physical culture. The total enrollment for the session of 1916-17 was 449. This includes an afternoon class for mothers and a short course in agriculture.

Enrollment by Departments

General 45

Commercial 72

Industrial 28

Household arts 209

A short course in agriculture consisting of five lectures was given during the month of March. This course had an enrollment of 45. The enrollment in the afternoon course for mothers was 50.

Time Schedule

The evening school is in session from seven-thirty to nine-thirty, on Tuesday and Thursday for 7 months, beginning in October and ending in April. One apparent fact in evening school work is the large number (one to 32 of the population) attending the evening school. Another desirable feature is the good attendance on the part of those enrolled. This indicates in a general way at least that the evening school of Janesville interests and meets the needs of the community.

Mother's Afternoon Course

A course that seemed to be particularly worthwhile and commendable is the mother's afternoon sewing course. This class meets in three sections of the city one afternoon each week. The course is designed for mothers who are interested in acquiring knowledge of how to make garments needed in the home.

DOMESTIC SCIENCE

Unfortunately owing to circumstances it has not been found practicable to make an extended survey of the domestic science department as originally planned. Only a cursory inspection was made and only general conclusions reached.

The enrollment in that department was 126 or 41% of the 306 girls in the high school; of these 46 were first year; 50 second year; 20 third year and 15 fourth year students. This is a gratifying showing and indicates a hearty interest in this branch of the school work. These figures good as they are do not indicate the whole number of girls who have had this training since the majority have had considerably more work in the grades before entering the high school.

The work includes the usual lines of sewing and other types, common in schools such as Janesville with the additional fact that it is offered four years instead of two as is the case in most places.

The courses of study in the different lines are definitely and carefully outlined and the administration appears very efficient. The annual exhibit of the work was highly commendable and indicated the very practical nature of what is being done.

The equipment is plain and serviceable and probably adequate though a part of the kitchen apparatus and fixtures is not up to the standard of the newer schools.

The rooms are poorly lighted, inconvenient, difficult of access and inadequate. They are evidently an after thought to meet an emergency owing to a growth in courses not originally provided for. Janesville was one of the leaders among the cities of the state in the introduction of the course in domestic science into their schools and naturally made the best of accommodations then available in its building, but the time has come when it should again be in line in the matter of facilities for efficient and successful work. It is to be hoped that in the near future such accommodations can be provided.

THE INDUSTRIAL SCHOOL

The industrial school had a total enrollment of 87 pupils (1916-17) in the all day class and 218 in the permit class. The permit class attend four hours per week. The courses offered to the boys besides the academic work are woodwork, gas engine and electric wiring, work. The girls are offered, besides the academic work, domestic science, and commercial work. All pupils must be 14 years of age or over. A director and two teachers give all of their time to the work. Four other teachers give part time. The director is a competent man and is himself a capable teacher.

This school is seriously handicapped through the lack of proper rooms to carry on laboratory work, and also for the lack of equipment. There can be little development under the present conditions. A development of the work in such lines as electrical, gas engine, and auto mechanism, is highly desirable. It would give added interest to the work, and would give the boy a keener sense of appreciation of the industries.

THE CHILDREN WHO NEED INDUSTRIAL EDUCATION

In any school system, there are to be found children who are several years overage for their grade. These overage children seldom complete the regular elementary grades in any great numbers. The reasons for this are several. Some of these children would in all probability advance more rapidly with better teaching. There are others who, for some reason or other, have not attended school regularly. Still others are bored by dry and unappealing subject matter in the curriculum. These consequently fail to make normal progress because they fail to regard it as worth while.

There are some who, by nature, are not as capable of profiting from certain types of instruction and for whom other types of instruction of a manual nature must be provided. Finally, there are children who are normally bright and capable and who advance regularly but who express a preference for industrial pursuits.

At present, 28.9% of the children in the Janesville schools are one or more years overage. If we take a single age group, the children who were 11 years old in September, 1916, we find them distributed in every one of the elementary grades from the first to the eighth. If we take the 14-year olds, we find them scattered from the third grade to the junior year of the high school. Eleven-year-old children ought normally to be found in the sixth and not lower than the fifth grade. Children 14 years of age in September should have completed grade eight and be in grade nine. These facts will be seen more definitely from the following table:

TABLE 32.—*Grades Completed by Children 11 and 14 Years of Age.*

Grades Completed and Grades Now in													
No. of Children	Age	Still in Grade I	Completed I and in II	Completed II " " III	Completed III " " IV	Completed IV " " V	Completed V " " VI	Completed VI " " VII	Completed VII " " VIII	Completed VIII " " IX	Completed IX " " X	Completed X " " XI	Total
.....	11 yr.	1	2	3	16	36	38	44	11	.....	.....	...	151
.....	14 yr.	.....	.....	1	.....	3	3	5	34	79	15	1	141

Some of these children who are overage for their grade will, doubtless, remain long enough to complete the course in the regular elementary grades but it is improbable that children three and four years behind their normal grade will do so. These children frequently leave school before they complete the fifth, sixth or seventh grades. It requires no argument to convince any fair-minded individual that children who leave school with no more education than that afforded by these grades are not well equipped for life. Here then is where a distinct problem of education arises and it cannot be solved by any single blanket panacea. Some improvement can be accomplished through better teaching of the traditional subjects, and revision of the subject matter. Some additional improvement can be brought about through the organization of special classes for exceptional children and through the organization of a junior high school with its provisions for prevocational training, and through offering more definitely vocational training in the high school.

What becomes of these children who leave school early? The future of the children who will leave school early must be seriously considered. A number of them will enter so-called "blind-alley" jobs receiving a relatively high initial wage, but advancing little during their normal working life. They are quite apt to become social misfits at fifty or earlier. Others will become machine operators in industries not requiring educational training and emphasizing speed rather than skill. These too in the course of the few weeks or months required to attain a high speed will receive a relatively high initial wage, and likewise will advance but little in pay or position. They may expect to find themselves displaced by younger workers rather early in life. At the present time, relatively few young workers can hope to pass through a stage of apprenticeship and into a trade.

Some trades are slowly but surely giving way to machine processes and even were it advisable to prepare definitely for certain trades at this time there is little assurance that that trade too will not be largely displaced by machine labor a few years hence. From the standpoint of the home, consideration must be given to those young girls who enter upon factory work and who consequently lose the opportunity of an apprenticeship in cooking and homemaking under the mother's supervision. Few female workers in Janesville factories remain after marriage. The

period of factory labor for them covers but a few years. They are suddenly faced with the problem of managing a household after a period of factory labor which has afforded them no training for the duties they will be expected to perform. For these, the school must make some provision.

EDUCATIONAL RECOMMENDATIONS

Suggestions from Manufacturers and Workers

A significant outstanding fact resulting from the conference with manufacturers and workers was the frequent small concern of these practically minded men for either the knowledge or the skill ends of school training. It might be expected that these men representing the practical side of everyday life would express a desire that boys and girls be trained in doing things with their hands. Much to the surprise of the surveyors, neither of these ends was emphasized as fundamental. Training in the fundamental qualities of character was mentioned as the primary function of the schools. Personal habits of cleanliness and temperance, politeness, thoroughness, and accuracy in work attempted, initiative, and originality are qualities necessary for business or vocational success. Good habits of thinking, rather than book knowledge or specific skill in the manipulation of machinery, the ability to express thoughts and qualities in writing briefly and to the point are prized in the business world.

For office workers, a good general knowledge is desirable. In some of the establishments employing large numbers of office assistants, a high school education is required and a university education preferred. Some business training with a good command of written and spoken English are important factors contributing to success. A criticism frequently encountered by the surveyors centered on the poor preparation of the average stenographer in English. More thorough training in correct expression should be given in the schools. Business men desire office assistants to whom they can dictate a letter with an assurance that it will not be written and mailed containing errors in expression, spelling, or punctuation. Accuracy, rather than speed so often emphasized by the "get-an-education-quick" type of business college, is preferred.

In the printing trade, proficiency in spelling, punctuation, and the elements of composition were urged. Training should

include advertising methods and publicity. These it will be noted are all suggestions calling for instruction in academic subjects.

For the building trades, architectural drawing and mathematics are desirable. Painters in particular prefer in addition to the above training an appreciation of color schemes and decoration, and the knowledge of the properties, characteristics and methods of treating common woods.

Success in telegraphy requires both a commercial and a technical training. Office management is an essential.

For mechanical pursuits, mathematics, freehand sketching, mechanical drawing and blue print reading are the courses most needed.

It is the opinion of the manufacturers and workers of Janesville who were questioned by members of the survey who visited the various factories, that the need of Janesville is not for specific training for girls and boys in any branch of the industries, but rather for a general industrial or vocational training that will train for development and initiative within certain fields so that the pupils may readily adjust themselves to meet the conditions of any kind of industrial or factory work after leaving school, no matter in what grade the pupil is forced to leave school, providing it is in the upper grades.

The growth of industrial factories in Janesville demanding skilled labor has not been very rapid and while there is a steady demand for a certain amount of skilled labor, there are no large industries springing up that would call for the establishment of a trade school by the city. The expense of such a school must necessarily be large, and is not demanded by the industries of Janesville at this time. The demand for training in any one trade or industry is not sufficient to warrant special training for that particular line.

General School Problems

In making provision for industrial education, three factors are involved: (1) Employment of properly trained teachers under adequate supervision and who should have facilities for further training when in service; (2) Organization of industrial courses with a view of cooperating with the industrial establishments; (3) Suitable rooms and necessary equipment to carry on all the work intelligently. The question of how much time should be devoted to industrial or vocational work in the seventh,

eighth, and ninth grades is one that should be given careful consideration. If the work is designed to give a knowledge of the industries and social conditions and opportunities, and an opportunity for a boy to find himself, it is obvious that more time (eighty minutes per week, is the amount of time usually allotted to the work) must be given to this phase of the work.

Industrial Courses

Prevocational courses should be offered in the junior high school. These should aim to enable boys and girls to discover their own aptitudes. They should help a boy to find out if he is mechanically inclined and fitted to become an electrician, carpenter, printer, or whether he is better adapted to commercial, agricultural, or professional pursuits. Girls should be given an opportunity to learn something of the various phases of home economics as well as knowledge of courses leading to commercial and professional activities. Industrial art courses should be taught from the fifth grade up without any thought of future vocation on the part of the pupils. The work should be centered upon the development and nature of the necessary common industries of our daily life.

Work of a prevocational nature should begin in the seventh grade. The courses should be so arranged that the boy and girl may spend one-half year at least in several different types of work before completing the eighth grade. The ninth grade might well be used as a year in which the pupil may concentrate on some special subject, if it is necessary that he or she should leave school at the end of the ninth grade. To do this, it would be necessary to increase the time given to industrial work and to make it a daily subject. The special subjects offered for boys might well be as follows:

For Boys

- Woodwork.
- Electrical work.
- Gas engine and general metal work.
- Printing, forge and machine work.
- Agricultural work.

For Girls.

- Cooking.
- Sewing.
- Household management.

The industrial work of the high school after the ninth grade should be such that pupils desiring an advanced technical training, but who may not go on to college, may receive it in the three latter years of the senior high school. To do this it will be necessary for students who intend to follow a technical course to spend about one-third of the school day in the school shop (with the possibility of a cooperative arrangement with manufacturers). Before specializing one year of woodwork should be required of all high school students. The fact that one-third of the day is spent in the shop by the students who are to follow a technical course should not interfere with the work of the pupils who are taking industrial work for the general practical value and training that is obtained from such a course, and designed to round out a practical education. However, the courses in industrial work should be so arranged that pupils who signify a desire or are particularly adapted for such courses are given an opportunity to develop this work along lines of special interest. Such courses should be closely vocational.

Opportunities for Learning About Industries

The industrial classes should obtain first-hand information of civic life, industrial and commercial occupations by visiting industrial plants. Information on how the city's business is carried on, conditions under which employers work, the nature of the occupation, and the attractiveness of the work may be learned at close range. A member of the firm visited may be asked to give a talk to the class before or after the visit on the requirements of the particular work of his firm, the type of worker desired, the time required to learn the trade or occupation, the amount of training and skill demanded, the wages and opportunities for advancement. Reports of what transpired during the visit may be written as a report for the English work. The girls may visit the textile factories and other plants where female help is largely employed. A schedule of such visits should be made out at the beginning of the school year. A series of illustrated lectures or talks about industry should be made a part of each year's program.

Education for Private Life

Finally, one other phase of education for those who enter industry needs to be considered. Suggestions from manufacturers reveal a regard for the particular knowledge deemed necessary for the workers' success in the occupation. They do not, however, express sufficient concern for the social and civic aspects of the child's education. Not only his immediate present but his future must be considered. Not only his working hours but the hours which he will devote to household, business, or civic affairs and to leisure need attention. The children must be taught how to live. As a man or a woman, he will need to know how to buy and sell, how to invest, how to insure his own future comfort. A knowledge of the personal and community aspects of health is a necessary part of every child's equipment. He should be equipped also with the means of finding enjoyment in books, music and art whereby leisure hours may be made a source of pleasure, and profit. Children thus trained will make not only workers but American citizens.

SUMMARY OF RECOMMENDATIONS

A. Courses and Instruction

1. That no attempt be made in the grades or the industrial school to train for any special industry or trade, but rather that a general training for ready adjustment to many occupations be offered.
2. That the attempt to provide specific training for industries include more thorough training in English, practical courses in drawing, mathematics, and business practice.
3. That prevocational courses planned to meet the needs of boys and girls in finding the occupations to which they are best suited be organized under the junior high school plan.
4. That industrial art courses begin in grade five.
5. That industrial work in the high school be made more definitely vocational in character.
6. That the schools attempt to establish a cooperative arrangement with manufacturers for the training of boys and girls in industry.
7. That systematic visits to industrial and commercial establishments be made to gain first-hand information of working conditions and be made a part of the program of training for industries.
8. That the present industrial and manual training work be reorganized under a capable director responsible for this work.

9. That a rearrangement of courses be made so that industrial school pupils may have the use of a high school cabinet shop, machine shop, and forge shop.
10. That greater emphasis be placed upon the developmental or initiative side of all industrial work.
11. That whenever possible, teachers for industrial work be experienced workmen with pedagogical training.
12. That the director of industrial work supervise teachers and conduct teachers' meetings at frequent periods for discussions on the development of the work.
13. That closer correlation between the industrial courses be worked out.
14. That the courses offered in the evening and industrial schools include instruction in the care and mechanical operation of automobiles.

B. Equipment and Physical Conditions

1. That better accommodations and equipment be provided for domestic science.
2. Industrial school: there is urgent need of new shop quarters for the industrial school.

C. Manual Training

1. That new woodworking benches and drawing tables be made and the present benches and tables discarded.
2. That much of the new equipment required for the reorganization of the work be made by the pupils.
3. That alterations in the woodworking and drawing rooms be carried out as suggested elsewhere in this report.
4. That the equipment in the mill room be rearranged to reduce the danger hazard.
5. That the motors and other equipment in the machine shop be rearranged to permit of more light entering the room.
6. That the present composition blackboards be replaced by slate boards.
7. That arrangements for better cleaning facilities for the manual training rooms be made.
8. That the basement halls of the high school be not used for storing old equipment.

VIII CLASSROOM INSTRUCTION IN ELEMENTARY SCHOOLS

INTRODUCTION

1. *The Importance of the Elementary School*

The elementary school is in a special sense the school of the people. It is this because of the fact that it reaches larger numbers than do the higher schools.

In the 1915-16 Biennial Report of the State Superintendent of Public Instruction, it is stated that in Wisconsin for every group of one hundred children in the first grade there are only eleven graduates from the high school. This shows the relatively small number who receive the benefits of complete high school education. The Wisconsin compulsory education law aims to secure full school attendance for all pupils up to the age of fourteen and at least partial attendance up to seventeen years of age. This law justly and beneficently reaches the great mass of children and makes the grades the most universally attended and most democratic of our schools. Since the great majority of children receive their only schooling in the grades, it is evident that favorable conditions should prevail in the elementary schools. Do they?

In the business world, one criterion that is generally accepted for measuring the value received is the cost. How does the cost of schooling for pupils in the Janesville grades compare with the cost throughout the country? For the year 1915-16, each pupil in the Janesville grades cost the city \$18.40. The 1916 Report of the United States Commissioner of Education gives \$27.11 as the estimated cost per pupil for public elementary schools, which shows that Janesville spent \$8.71 less in 1915-16 for each grade pupil than did the average school in the United States. The importance of the elementary school and the cost fact should be borne in mind when considering the findings of the staff of grade visitors.

2. Methods of Presenting the Report on Classroom Instruction

The report on instruction in the elementary grades is presented in three sections. The first of these is devoted to a general treatment of the survey of instruction. It discusses the method by which instruction was judged, the factors considered in judging the quality of instruction, and includes a general summary of the findings.

In the second section a more detailed consideration is given to the types of teaching witnessed. From a constructive point of view any survey of instruction will quite likely be of more help to the teachers whose work the survey seeks to improve if it analyzes quite fully and indicates specifically the particular points of strength and weakness. Accordingly the members of the staff who judged instruction have attempted to classify the lessons seen according to recognized types in order to determine (1) the relative frequency of each of the different types and (2) the adaptability of the particular type of presentation chosen to the material in hand.

Regardless of whatever criticisms may be made of the general character of the instruction or of the various types of teaching there are teachers who desire some indication as to the merits of their ways of presenting a particular subject such as reading, arithmetic or spelling. While a teacher may see the application of certain teaching principles to certain subjects in the course of study she is not equally capable of adapting them to others. It was not uncommon, indeed, to find teachers who were strong in presenting a particular subject, such as geography or reading but whose work in other subjects was much below this standard. In view of these facts those who judged instruction have deemed it best to present a discussion of the quality of instruction with reference to particular subjects of the curriculum. The third section of this chapter treats instruction from this point of view.

SECTION I.**GENERAL OBSERVATION OF CLASSROOM INSTRUCTION***How Instruction was Judged*

The grades were visited by four supervisors of the State Department of Education whose training and experience have been devoted to the problems of elementary education. Before undertaking the work, they met with the State Superintendent and discussed standards by which it was to be measured. While recognizing that a certain uniformity in standards is desirable, they did not ignore the fact that justice to teachers and pupils demands flexibility as well as uniformity, and they therefore aimed to avoid the rigidity that not infrequently accompanies the setting up of fixed standards. Furthermore, to insure a just as well as a critical estimate of each teacher's work, it was determined that each should be visited by more than one member of the staff. This was done in every case. Each supervisor kept a record of the details of the visits to individual teachers; each passed independent judgment upon what had been seen before entering into discussion with the other members of the staff. At the conclusion of the survey, the supervisors met and discussed the details of each teacher's work and justified their estimations of it by statements of the reasons that led to their conclusions.

In addition to the supervisors' personal judgments on the character of the teaching and the quality of the results secured, standard tests were given to the pupils in each grade beyond the second. The results of these tests were not relied upon to furnish a basis for the judgment of each individual teacher's work, though the findings were consulted after the teaching was estimated, and in a number of cases it was found that the results corresponded very closely to the judgments formed by the supervisors. The supervisors moreover did not lose sight of the fact that promotions had occurred shortly before these tests were given and that as a consequence, some grades were being taught by teachers who were but slightly responsible for the pupil's achievement or lack of achievement. However, the results of the tests by indicating the accomplishments of each grade, furnished a basis for comparison of corresponding grades in Janesville, as

well as for comparison with grades of other cities where similar tests have been applied.

Additional information concerning the teachers' potentialities and professional equipment were secured by a questionnaire dealing with professional problems which each teacher was asked to fill out. Questions were of such a nature as to indicate the teacher's breadth of thought, professional outlook, and attack on professional problems. For illustrative purposes, a few are here inserted:

Are you consciously working this year on one or more definite problems of instruction in connection with your work? What is the most important of these and tell what is being done?

What is the most important thing that has happened during this year that has made a difference in the way you teach?

By what standards do you think your teaching should be judged?

What are the chief difficulties encountered in your work?

It is interesting to note that after the staff members had settled in their own minds the character of a teacher's work, they consulted the questionnaire filled in by the teachers and frequently found marked agreement between their judgment of the teacher's work and the teacher's own statement of her understanding of an attack on professional problems. The strong teachers were consciously working toward definite goals, were aware of the difficulties to be overcome, and gave commendable standards by which they thought their work should be judged.

Factors Considered in Judging Classroom Instruction

The standards established for the judgment of work will depend largely upon the judges' conceptions of the aims to be accomplished by the school. The object of the school should be, of course, to give each child those opportunities for cultural, social, and vocational development that are best suited to his tastes, and abilities, and that will therefore enable him to render to society his best contribution. Only recently has it been recognized that the common school has any obligations other than cultural. For this reason, the work along social and vocational lines has not been widely introduced in schools and is largely in the experimental stage. Janesville has pursued a somewhat conservative policy and judgment of its elementary work, there-

fore, resolved itself largely into a judgment of the teachers' conduct of the traditional school exercises which center upon a study of the common branches as treated in textbooks, and the reaction of the pupils.

The investigating staff agreed that there are four main factors that determine the quality of school work. These are the pupils, the course of study, the teachers, and the supervision.

Pupils. Before we pass judgment upon the quality of instruction and its influence upon the pupils, we must take into consideration the kinds of children who are to be instructed. Curricula are ordinarily prepared with physically sound and mentally alert children in view. Our schools, however, gather in pupils of all degrees of physical and mental strength. Their responses to school work are therefore as varied as are their physical and mental states.

Janesville is not ministering adequately to the physical needs of its school children and as the progress of pupils is determined in part by their physical condition, it is clear that best results will not be secured in the schools until a thorough system of health supervision is established.

Concerning the various degrees of mental ability represented in the city schools, it should be noted that following the Janesville grade inspection of 1916, made by the grade supervisors of the State Department, the State Superintendent's report to the board of education and to the city superintendent drew attention to the fact that at that time there existed a grave problem of retardation; that Janesville was not making provision for the varying needs of pupils, and was not taking into consideration the differences in their mental abilities. It was suggested that measures be adopted to correct this situation.

In the section of this report dealing with retardation, Chapter XV, it is shown that the introduction of semiannual promotions has greatly reduced the percentage of retardation. This is a most desirable reduction, but it must be borne in mind that it is as yet largely a surface correction. Semiannual promotions will work continuously against retardation, because promotion periods having been reduced from one year to a half year it is possible for pupils to regain lost ground more readily. This change is therefore a most commendable one, but at present a number of children are still below grade in their acquirements

though classified as belonging to grades that are appropriate for their years. This accounts somewhat for the fact that in naming the chief difficulties encountered in their work, a number of grade teachers listed the fact that retarded pupils require an undue proportion of their time and thus interfere with the progress of other members of the class. Special teachers should be employed for ungraded work, and thus make provision for the teaching of pupils who require special attention. This would combat and in many cases correct retardation itself rather than merely correct it on the surface.

The establishment of summer schools is another measure that is being adopted in numerous cities to provide opportunity for pupils to make up work in which they have failed and thus to make more rapid progress.

Such measures as these will do much to help the normal child who is in need of individual instruction, but it must be remembered that there is another group of children for whom instruction of a different type should be provided. These are children who cannot progress at the normal rate, pupils who are three or more years overage for their grades. Every school system has some such children enrolled. Janesville undoubtedly has enough of these to make imperative the establishment of a special room wherein they may be taught. The removal of these pupils from the regular grades would greatly improve working conditions in the school.

Before the best working conditions can prevail and best results can be secured in the schools, it is necessary that a study be made of the types of children represented and that as far as possible, education suited to each of these be provided.

Given children in good health and possessing normal degrees of ability, what responses are we justified in expecting? This is dependent in the majority of cases upon the stimuli offered by the teachers. Pupils' response may fall under the general heads of conduct and mental activity. Regarding the former, the supervisors agreed that on the whole, the discipline is good. They saw few instances that would indicate that this is not true. This is a commendable matter, for good results cannot be secured when discipline is poor. It is evident that Janesville teachers recognize the importance of good discipline and have consciously worked to secure it, for in answer to the question, "By what

standards do you think your work should be judged?" the majority listed discipline as one of these.

Just as there was agreement among the survey staff that the school discipline, with few exceptions, was good, there was also agreement that in many cases the mental activity was not the best; that an undesirable passivity characterized the attitude of the children in many of the rooms. This may be traced to the fact that in some cases the subject matter was unsuited to the needs and interests of the pupils, that no attempt was made to make it real by linking it with out-of-school experience or with present day conditions, and in other cases, to the fact that teaching aims and methods were not the best.

Course of Study. The course of study is at present being revised with a view to eliminating material that is not suitable. A detailed consideration of this factor in determining the quality of instruction is therefore omitted. The organization of a junior high school recommended elsewhere in this report will in itself call for a course of study better suited to the needs and interests of pupils. The fact that some of the unsatisfactory class work could be traced directly to poor teaching brings us to a discussion of the work of the teachers.

Teachers. The most important factor in determining the character of school work is the teacher. A teacher's success is determined to a certain extent by her natural mental endowments and character. Teaching, however, is a profession that demands careful preparation from those who engage in it. Of the forty-nine grade teachers, twenty-seven have been graduated from normal school; one has had a year's training at normal; fifteen have had less than the equivalent of one year beyond high school. Of the fifteen who are only high school graduates, only six have attended summer school during the past ten years. Of those who are normal school graduates, three have attended summer school during the past five years. Of eighteen normal school graduates who were graduated before 1912, fifteen have never attended as much as a six weeks' summer session since graduation.

It is evident from these statements that a number of the grade teachers have made very limited professional preparation for their work. This fact, however, was not taken into consideration by the survey staff until the classroom visits were made, and judg-

ment had been passed upon the work observed. Then it was found that there was a marked relation between the work in progress and the teacher's professional training. For this reason, attention is called to the importance of encouraging increased professional training and professional growth by increasing salaries of deserving teachers.*

In judging the teachers' ability, the importance of a cheerful, patient, vigorous and inspiring personality was taken into consideration. A successful teacher requires these characteristics. Judgment was also passed on the teachers' preparation for the day's work, on her organization of the subject matter, on her teaching methods, and on her ability to develop initiative and independence on the part of the pupils. With these standards in mind, it was judged that twenty-two of the forty-nine teachers were doing vigorous work. It was well-prepared, organized and presented, and the pupils were acquiring good habits of study, thinking, and industry. These are commendable matters, but unfortunately they were not general throughout the Janesville grades. The work of twenty-seven of the teachers was not characterized by these traits. It was lacking in stimulation and vigor, and the methods that were employed did not secure the best results.

A brief summary of the estimation of the work of the grade teachers is as follows:

There are forty-nine teachers in the grades: of these four were found doing very good work; eighteen doing good work, twenty-two doing fair work, and five doing poor work. Very good and good represent creditable work; fair represents work that is lacking in the stronger characteristics, and poor represents work that is unsatisfactory. It is evident that fair and poor are grades of work that are below the standard that a good school system should establish, and that more than 50% of Janesville's teachers are doing such work.

Earlier reference has been made to the fact that the teachers themselves were called upon to state standards by which they thought the work should be judged. These statements show that some of the teachers have good ideals of what should characterize good work. These ideals however are not generally entertained.

* Note: Since the verbal report showing the advisability of this was made to the board of education, a salary schedule has been adopted which has already stimulated professional study.

The subject of aims would therefore be a profitable one for discussion at local teachers' meetings in order that a better understanding of desirable goals might be established.

Some of the undesirable features that were frequently observed are here listed:

a. Teachers do too much reciting and talking. The class period is primarily the pupils' period and should be treated as such.

b. The work was almost entirely memory work. Lessons were assigned by paragraph, pages, or topics. This is not in accord with the newer conception of education which supports the claims of the problem method of assignment and emphasizes the importance of independent thinking and judgment on the part of pupils. The questions too frequently merely tested the memory by calling for textbook facts and seldom for the reaction of the pupils on these. Many questions were answered by single words or phrases; too few called for topical recitations.

c. The work failed to challenge the interest and attention of the majority of the class. Frequently only the pupil who was reciting gave full attention. It was also observed that this lack of interest carried over to the study period and that a number of pupils failed to make proper preparation for their work.

d. The work was not socialized. Pupils recited to teachers and frequently so indistinctly that they could not be heard by other members of the class. Under these circumstances, it necessarily followed that any comments or corrections that were offered were made by the teachers. Greater effort should be put forth to organize and present the material in such a way that pupils will be interested in class discussions and will be stimulated by this interest to ask questions about doubtful points, to offer necessary corrections, and to contribute additional material from their observation, experience, or outside reading.

Supervision. The fact that teaching methods were in many cases ineffective and wasteful leads to the suggestion that this situation may be corrected by making provision for more grade supervision. This would undoubtedly call for the appointment of a grade supervisor. The supervision in the grades has been limited in the past because of the fact that the superintendent's duties have been so numerous that he has been unable to give a due amount of time to grade supervision. It seems scarcely

necessary to state that the results secured throughout the schools of any system are dependent to a great extent upon the quality and amount of supervision that is provided. Able supervisors devoting a sufficient amount of time to the supervision of the schools greatly increase their efficiency. When there is inadequate supervision, there is great variety in the quality of teaching. Supervision standardizes work and thus unifies the teachers' efforts. A due expenditure of money for supervision is justified if it secures and makes general, high standards, definite aims, good methods, desirable habits of industry, and the maximum accomplishment for each pupil.

The Results of Inadequate Supervision

1. Much of the work lacked definiteness. It is true that at present teachers are preparing a new course of study, but in the meantime, they are handicapped by an indefiniteness of aim, for they apparently have been thrown on their own resources because of lack of copies and lack of suitability of the old course. In many cases, teachers in corresponding grades were working in complete independence of each other. This means that if a pupil in one school were transferred to another, there would be nothing to insure that he had had work that would fit him to enter the class to which he had been transferred. While a rigid uniformity throughout the city is undesirable, a definite body of knowledge should constitute the minimum accomplishment for each grade.

2. Often, the subject matter was not wisely selected. One of the surveyors noted that the spelling words which one of the teachers was dictating were unsuited to that grade of children. When she questioned the teacher concerning the selection, she found that each teacher selected her own list, regardless of the selection that had been made by the preceding teacher, or of that which would be made by the teacher in the following year, or regardless of help other than her own judgment. In view of the fact that scientific studies and investigations of spelling have been at the disposal of the public for several years, it seems short-sighted for teachers not to have benefited from them. It is understood that this will be corrected when the new course of study is ready.

Another illustration might be offered. The schools were

visited shortly after the semiannual promotions had taken place. In a number of cases, the visitors asked the teachers what their classes had read before their promotion and in each case, the teacher was unable to state.

3. Many experienced teachers were employing wasteful methods. This was especially noted in drill exercises which were so conducted that only the child reciting was receiving the benefit of the work. The employment of better methods would have intensified the drills so that each member of the class would have profited from them.

4. Study periods were not properly supervised. Some teachers were attempting to supervise class study and failing in doing so because they were not sufficiently imbued with its spirit nor acquainted with its technique.

5. Some teachers were failing to see and to study their own problems. One of the questions put to the teachers was: What are the chief difficulties encountered in your work? Eleven teachers failed to list any.

In reply to the question, "Are you consciously working on one or more definite problems of instruction in connection with your work?" nine teachers failed to answer, which would indicate that they were not doing so. Though a number of teachers listed problems that were pertinent and well worth their study, other replies showed a lack of comprehension of professional problems.

Improvements That May Be Effected Through Closer Supervision

Improvements in classroom instruction could be brought about through closer supervision:

1. By providing for greater definiteness.
2. By providing for more departmental and grade meetings at which aims and specific methods and results could be discussed. At these meetings, demonstration classes could be conducted by the strongest teachers, for the purpose of illustrating good methods.
3. By making it possible for each teacher to be visited more frequently and to profit from these visits by individual conferences with the supervisor who would discuss the work with her and offer constructive criticism and encouragement.

RECOMMENDATIONS

1. That the problem of pupil health be investigated and adequate follow-up measures provided.
2. That special teachers be supplied to give individual help to those children who are in need of this.
3. That a room for exceptional children be provided for those pupils who are three or more years overage.
4. That summer school work be organized for grade pupils who desire the opportunity of making up work.
5. That a grade supervisor be appointed to assist the superintendent in supervisory work.
6. That the school be reorganized on the 6—3—3 plan.
7. That the salary schedule be based upon merit, preparation and professional interest, so that teachers may develop an interest in professional study and improvement.

SECTION II

TYPES OF LESSONS OBSERVED

“Education is worth just the difference it makes in the activities of the individual who has been educated. The question is not how many books did we compel the child to read; how much does he know of arithmetic, geography, history, music, art, and the like; but rather, what *use* does he make of his knowledge; how is he different from the person who does not possess this information; and, still more important, are these differences in his activity desirable from the point of view of the group in which he lives.”—Strayer.

With social efficiency as the aim of education, the means employed should **always** contribute something to the end desired; and methods of teaching must be rated as good or as poor in so far as they lend themselves to, or fail to lend themselves to, the self-development of the pupil.

The great variety of ways in which children learn has necessitated a varied procedure in the teaching process; therefore, certain types of instruction, though somewhat overlapping in scope and often hard to define, have been accepted as fundamental. These types are all necessary, yet some are out of place under certain conditions and often one type is used by the teacher when another would be of much greater benefit to the pupil.

True skill in teaching, then, calls for careful discrimination in the use of lesson types. Those methods must be at all times employed which grow naturally out of the nature of the subject matter to be presented and the desired results to be obtained. Also, those means must be used which make for a maximum amount of pupil activity on the intelligence plane and a minimum amount on the mere memory plane.

The instruction in the Janesville schools has been analyzed with the view of determining (1) the relative amounts of thought and mere fact memory work that are being required of pupils; and (2) the amount of pupil organization, of pupil initiative, and of pupil judgment that is being encouraged. This discussion also aims to show the advantages of the motivated exercise over the formal teacher-dominated recitation.

The generally recognized lesson types are as follows: the inductive and deductive development lessons, the study lesson, the recitation lesson, the lesson for appreciation, the drill lesson, and the review lesson. Others that are sometimes found are the object lesson and the assignment lesson. The surveyors took into account the fact that few actual teaching exercises fall entirely into any one of these groups, and in all cases the main part of the lesson was used as a basis for the classification, hoping thereby to get a fair estimate of the proportion of the teaching of each type that was being done. Eleven of the 150 lessons seen were unclassified because of the fact that their composite nature made it difficult to determine which type best defined the instruction being given. The composite lesson is often justifiable and the percentage of lessons of this kind noted is an evidence that the teachers make use of this means of instruction when conditions demand it.

The following tables indicate the summary of the visits made and form the basis of the conclusions reached.

Number of lessons seen.....	150
Number of lessons classified.....	139
Number of lessons unclassified.....	11

Classification by Type

Number of lessons classified as drill.....	65
Formal drill	51
Motivated drill	14
Number of lessons classified as development lessons.....	3
Number of lessons for appreciation.....	20

Number of recitation lessons.....	41
Questions and answers.....	19
Topical	8
Socialized	14
Number of study lessons.....	10
Number of review lessons.....	0
(Some of the unclassified lessons were partially review lessons)	
Number of opening exercises.....	0
<hr/>	
(Outside of kindergarten).....	139

Classification by Subject

Reading	33	Music	7
Language	21	Grammar	6
Phonics	13	Art	5
Arithmetic	12	Physical Ex.....	2
Geography	12	Construction	1
Kindergarten	10	Nature Study.....	1
Writing	10	Physiology	1
History	8	Stereopticon	1
Spelling	7		
		<hr/>	
		150	

The Development Lesson

By development lessons are meant those commonly known as inductive or deductive lessons. These lessons are always concerned with *related* ideas. When a lesson aims to find the generalization or the common element that relates several ideas, it is an inductive exercise. To illustrate: In a primary grade the following problems might serve as a basis for an inductive exercise.

1. I bought six apples for 30 cents. James wants one of them. How much should he pay me for it?
2. We needed 10 quarts of milk for our school lunch today. Mary paid 90 cents for it. What does the milkman charge per quart?
3. Fred brought 3 new pencils to school this morning. He told me that they cost 6 cents. Who can tell us how many pennies they will need, to buy one pencil like Fred's?

After these problems are solved by means of skillfully put questions, using the pupils' knowledge as a basis for each step, the teacher may ask, "What did you actually do in order to solve the first problem? The second? The Third? Did you do the same thing in each case? What was told in each problem? What was asked? Who can give us a statement that will tell us how to solve all problems of this kind?" The inductive development lesson, therefore is practical whenever new material, regarding which numerous illustrations may be given, and about which the child has a slight knowledge, is to be presented. This

type is also effective in arithmetic and grammar when the class knows the necessary particular data with which to determine general truths which are new to them. These two subjects are often less advantageously taught by the deductive method. The inductive lesson calls for practically all of the elements of good thinking. A high degree of pupil efficiency may be acquired by the judicious use of this exercise. On the other hand, when the process is reversed and the *general truth* or *explanation* is applied to a new case to explain it, the deductive method is employed. This can be illustrated by a lesson in geography. Children learn by the study of North America that the Arctic regions are cold. When Asia is studied, this fact may be called up and the question asked: "What would you expect the climate of Northern Asia to be? Why?" This is a valuable type of exercise and illustrates what is meant by the deductive development process because the child really uses his previous knowledge and thinks independently in arriving at a new conclusion. He may verify this conclusion by the use of his text. This is a higher type of thinking than is secured by just memorizing the fact that Siberia is cold. The deductive development lesson is therefore equally as effective as the inductive lesson when the former is used with intermediate or grammar grade pupils. It is not so often advantageously used with young children since they are apt to have difficulty in making inferences from abstract data. It will be noticed from the table that out of the 150 lessons witnessed, only three fell under the development classification, yet nearly all of the subjects of the curriculum lend themselves most advantageously to this means of teaching.

The survey staff noted cases where inductive and deductive lessons could have been used in place of the ones employed, thereby giving pupils more real practice in thinking. A lesson in arithmetic was witnessed by the observers in which a problem involving papering a room was being discussed. It was evident that the class needed to know more about the subject. Here was an excellent opportunity for inductive work, but instead of doing this, the teacher tried to get the complete process from someone who remembered how to work problems in papering. The partial knowledge of the class could have been used to great advantage in a development exercise so that all would have

participated in the thought work. In another instance, a study lesson on Russia was being conducted. Deduction would have been very effective here, as the pupils had the necessary data at their command. They could have reasoned out approximately the climate, probable products and occupations of Russia and could have then verified their conclusions from their texts and other authorities.

The Study Lesson

The study lesson, when correctly planned, is productive of much initiative and constructive training in the thinking process. The aim of the lesson, however, must be clear to the children; the assignment must be definite and stimulating; the references must be available; the means of verification must be at hand; the organization must be made by the pupil; and the assimilation must be thorough if correct study habits are to be inculcated. In the main, the qualities noted above were not characteristic of the study lessons observed by the survey staff. The study lessons seen, in general, consisted of reading the text orally or silently and, in the main, of answering the *teachers' questions* upon what was read. This plan denies to the pupils training in finding for themselves the necessary things to be done in order to master a lesson. The ability to analyze the situation and to solve a real problem is the sort of training that boys and girls need in their school work. The analysis referred to involves self-questioning on the pupils' part, which calls for a very constructive type of thinking. In two instances out of the ten lessons seen, the teachers were endeavoring to have the pupil select the main topic of each paragraph. This is helpful, but it is only one of the elements of true study.

The Recitation Lesson

The recitation lesson is in general "a clearing house of ideas." It may be (1) a question and answer type of lesson, (2) the topical method, or (3) the socialized recitation.

1. The question and answer method was the kind of recitation most frequently observed by the survey staff. This method often defeats the valuable purpose for which it was intended, in that it fails to give to the pupil sufficient opportunity for organization, for judging the relative work of details,

and for acting upon his own initiative. Nineteen lessons out of the total of 41 recitation lessons were of the question and answer type. Another danger in the use of this plan is found in the common practice of directing questions to only one pupil at a time without challenging the attention and effort of the remainder of the class. It is true that the question and answer recitation method is often necessary, but it should not be used extensively unless the nature of the subject matter lends itself to no other type of recitation; and whenever it is employed, the questions must be thought provoking and should call forth real effort on the part of all of the pupils. In several of the lessons observed, the nature of the questions asked was such that they could be answered by facts memorized from the text. It was also noted that in most cases the questions did not call for original thought or for information beyond the one text in the hands of the pupils. When this condition exists, the formal nature of the work robs this type of exercise of its usefulness.

The well put question is the greatest stimulation to thought activity that there is, but to be most effective, it should precede study, as this is the time when the pupil is expected to do his thinking about the topic in hand. When the question or problem follows blind study, it is usually answered by scrappy bits remembered from the text. It thereby fails to provoke the desirable amount of constructive thought upon the subject. The time to put the main questions relative to any topic is when the assignment is made. They then become the topics of the recitation. This does not imply that questions to stimulate more intensive thought or to clear up hazy notions are out of place at any time.

2. The second variety of recitation lesson is the topical method. By topical method is in no sense meant the almost word-for-word recitals of textbook material called forth by the announcement of subject headings by the teacher. On the other hand, this method rightly used calls for such an assignment that the pupil must make his own organization of the material to be discussed. It has its advantages over the question and answer plan in that the pupil has greater opportunities for exercising initiative and originality. The student also enjoys the sense of power that comes from accomplishing a complete unit of work. This method enables the pupil to see his own growth through an in-

creasing mastery of the tools of knowledge. He also has an opportunity of witnessing his own added facility and satisfaction in the continued use of these tools. There is probably no more effective way of doing real teaching than through the topical recitation rightly conducted. There were 8 lessons of this type observed by the visitors. In most cases they were of a constructive nature.

3. Social relationships and training for citizenship are vital aims of school activities. These features are prominent in the third kind of recitation lesson which is a socialized recitation. This method combines the advantages of topical procedure with added emphasis upon pupil direction, pupil organization, and general pupil responsibility for the conduct of the lesson. That fourteen of these lessons were seen indicates that no little attention is being given to this type of instruction. This method, when based upon a *problem assignment* calls forth the highest type of pupil activity and results in a gratifying amount of pupil growth and accomplishment. The dangers of this form of recitation are apparent and of the fourteen lessons reported upon, nine are characterized by the observers as scattering in their organization and five are indicated as being unified. However, this type of recitation eliminates much of the waste mentioned in the discussion of the question-and-answer type, and it stimulates good thinking and continuous activity on the pupils' part. It is a very commendable type of exercise when well conducted. It is hoped that teachers will develop skill in the management of this means of instruction so that it may always be a unified whole and give to the student a definite answer to a definite problem which he has done his part to solve.

The Lesson for Appreciation

Much of the richness of life is lost if one is not able to enjoy the beautiful in art, in music, in nature, and in literature. Therefore the lesson for appreciation is one of the most important types. Its method of necessity varies with every use of the exercise. However, the fundamental pedagogical principle upon which this lesson is based is that the teacher must fully appreciate whatever she is trying to make appear beautiful to the children. Some knowledge of the technique of the particular subject being considered is helpful but is not absolutely neces-

sary to true appreciation. This type of lesson tests to the uttermost the teacher's power to inspire; and her personality is often more largely responsible for her success than is the actual method employed. Twenty lessons of this type are reported and in most cases they were found to be of such a nature that the pupils were being made more appreciative of their environment. In a few cases the lesson was applied immediately. A particularly good lesson was witnessed in the study of Hiawatha. The children read parts of the selection and skillful questions put by the teacher drew from them answers which showed that they had grasped the spirit and beauty of the Indian tale. The teacher was particularly careful to compare the scenery which these children had observed with that depicted by Longfellow in order that they could really visualize his beautiful description. The children gave evidence of experiencing real joy and appreciation from this study.

The Drill Lesson

The drill lesson has its place and makes automatic certain types of knowledge. However, care must be exercised lest many facts which are seldom used and which should in most cases be arrived at by the use of principles and laws, when needed, are not imposed upon pupils. Often the children have no immediate use for these facts, and consequently do not feel the need of attacking them vigorously at the time they are presented. It is not the isolated facts such as a chronological table that constitute knowledge. The memorized knowledge that functions in life is organized, assimilated knowledge. The ability to use sources, to observe and to find out related facts whenever they are needed is of the utmost value.

The waste caused by teaching only one pupil at a time has been referred to. This waste even more frequently occurs in the drill lesson, and needs to be constantly guarded against. One of the survey staff reports that eight out of sixteen drill lessons seen failed in this respect, as only one pupil at a time was working, while large groups of children remained idle until their turn came. The survey staff also observed that often an entire class was drilled upon facts which all but a very few of the children knew. This condition can be avoided by selecting from the group those pupils who need extra work, and by giv-

ing the others useful employment; while the selected group are receiving additional training. Another advantage in drill work is gained by taking out of any package of drill cards those facts or words which are known to all of the pupils, thereby giving added repetition and emphasis to facts really needing more attention. If drill is necessary, it must be motivated in some way for the pupils, e. g., by being conducted with a time limit, by making it a competitive game, or by approximating as nearly as possible a real situation in which the knowledge is needed. Of the 65 drill lessons reported, 14 were motivated drills and the rest were formal and not related to child interests. In some cases these drills occupied an entire class period. A prolonged drill period, as for example in arithmetic or spelling, has been found by experiment to be largely a waste of time. The best results are obtained by frequent, snappy, and varied drills on material which is to be used as soon as possible in order that acquired skill may function without loss. Formal drill upon facts which are not vital to the child is not a high type of teaching and does not develop in the pupil desirable habits of attack upon any task. In the judgment of the survey staff there was too much of this kind of work being done.

The Review Lesson

The review lesson is necessary, and when it means a new view of the subject and calls for a real use of information previously gained, it requires a very constructive type of work upon the pupils' part. No lessons were witnessed which came really under this classification since mere repetition cannot be classed as review.

The teacher should find many opportunities for review work. To illustrate, a very profitable review period can be spent after studying the two countries of Brazil and Argentina by discussing the ways in which these countries are alike and the ways in which they are different. This discussion calls forth a summary of all of the conditions existing in each, and judgment is exercised in making each comparison. This affords a new view of the subject matter, and is much more effective than simply repeating the characteristics of either country. After a class has covered a period of history, each child may personify a character who helped to shape the period or who lived at that time and knew

the conditions. The children's personal narratives of their experiences add a decidedly realistic sense to the information, and this exercise conforms to the conditions expected in a review lesson.

SUMMARY

1. Approximately 46 per cent of all the lessons classified by the surveyors were of the drill type, in spite of the fact that only about 26 per cent of the lessons observed were in arithmetic, spelling, writing and phonics, which are the so-called drill subjects.
2. It is also noticeable that although the development method is one of the best ways of promoting pupil growth, only about 2 per cent of the lessons seen were of this type.
3. It is gratifying to find that about 13 per cent of the lessons observed were for appreciation.
4. It would seem that more efficiency would result from an increase in the number of topical and socialized recitations and a corresponding decrease in the amount of formal drill exercises. It will be seen from the table that only 22 topical and social recitations were recorded as against 51 *formal drills*.
5. Approximately 6 per cent of the lessons seen were study lessons. Here again a comparison of the number of formal drill exercises may lead to a greater emphasis upon and an improvement of the study exercises.
6. Many more interesting comparisons and suggestions for improvement can be derived from the results of this study. Among these would be a further inquiry into the methods now being used in Janesville with a view to finding out whether or not the teachers actually make use of *all* of the recognized lesson types, thereby doing constructive and balanced teaching.

SECTION III

THE TEACHING OF CLASSROOM SUBJECTS

READING

It may be well to state first the aims to be kept in mind in the teaching of reading in the elementary school. Pupils should get from the study of reading in the grades the habit of rapid and thoughtful silent reading for the purpose of acquiring useful information concerning many subjects of interest and importance to people in general; the habit of going to books, magazines, and papers for this information; and a sufficiently wide

acquaintance with literature, in the narrow sense of the word, to acquire a genuine love for reading books of the highest order of excellence, for purposes of entertainment, inspiration, and guidance.

The members of the survey staff saw enough to warrant their belief that the teachers in Janesville are preparing pupils with some measure of success to acquire this information. Not a little skill was shown by the pupils of certain classes in pronouncing independently, rapidly, and accurately, the words found in the reading lessons. A number of primary pupils have acquired the ability to take in several words at a glance. These good habits were the product of the word and phonic drills used by teachers to prepare the pupils for studying each reading assignment. The survey staff felt that this vocabulary work might have been strengthened by calling on pupils promiscuously, not consecutively; by more individual and less concert work; by so handling the perception cards that all the pupils in the section reciting could see them; by writing phrases, as well as isolated words, in the columns used for drill purposes; by writing phonic words on the blackboard without diacritical or other aids; and by placing more responsibility upon the pupils for their pronunciation. The teachers in many cases gave too much help in pronouncing words.

In many cases Janesville teachers recognize the importance of saving the time of pupils by good organization of the work in the mechanics of reading. The words for the phonic drills were written on the blackboard beforehand in order not to take up class time for the writing. An improvement possible here is the use of texts in hygiene and history, for silent reading and discussion, instead of for purposes of oral reading, which is the current practice. The use of texts in hygiene and history is a common practice in Janesville, owing to the fact that these subjects are not in the curriculum below the eighth grade, except as they are treated in connection with reading. Another time saver will be found in such record keeping, and visiting of one grade by the teacher of the next higher grade as to make possible a knowledge of the reading matter used and the results attained by the previous teacher.

The teaching in Janesville is in accord with the best modern usage in attaching importance to the value of elementary pupils

receiving daily practice in consulting books for information. Pupils were asked questions on the content of the reading matter studied; in some cases the preliminary conversation was so directed as to require pupils to use some of the technical expressions or literary phrases of the selections to be read, in reciting their own experiences. However, the survey staff are of the opinion that the teachers are somewhat handicapped in not having access to enough suitable reference books and supplementary material in which they, as well as the pupils, may look up topics and so contribute to the interest of the reading recitation. Pupils reporting on topics occasionally confined themselves to reading verbatim from paper what they had copied. Lack of familiarity on the teacher's part with the topic under consideration, was indicated by her not asking questions which would require pupils to exercise judgment, to weigh values, or to challenge any statements made. Facts were too often accepted without attention to their relative importance and essential accuracy.

Since the material at hand is so slight in amount, not much has been accomplished in stimulating pupils to do silent reading. Increasing the reading rate of pupils has not received adequate attention. The use of standard measurements during the present year, will, doubtless, be of much assistance here. The fact that the supply of reading material needs enlargement, accounts, in all probability, for the fact that classes frequently spend so much time on selections, that interest in the reading recitation is no longer keen. Moreover, a scanty supply of reading material prevents needed contact with an extensive vocabulary used in widely differing contexts.

In regard to the use of literary selections the survey staff was gratified to see a number of well-selected stories and poems in use. One recitation illustrating the kind to which pupils look forward with expectancy, deserves mention. The pupils sat in a circle and read with interest and enthusiasm, a well-chosen dramatic story. Their audience was kept in mind by the pupils reading, and the pleasure felt by the children in the activity in which they were engaged, was unmistakable. Their expression and enunciation were good, for they had mastered the vocabulary; they were not interrupted by the necessity of having mistakes corrected; and they had been helped beforehand by

the teacher to imagine the situations depicted. The listeners could not fail to note that the pupils were reliving the experiences of the characters in the story. However, this kind of class exercise was not so common as it might have been. There was, on the contrary, considerable mere word calling.

An excellent illustration of the service furnished by pictures was seen in a few classes in which the teachers were directing a study of the illustrations used in the text. Another recitation in which pupils were exhibiting laudable activity was one in which each child read aloud to the others a short selection new to his listeners. The auditors questioned the one reading and questioned one another on the subject matter. These two instances are good indications of the important part which it is possible for a teacher to play in a reading recitation. These teachers just described were not confining themselves to a word of praise or dispraise or to simply calling on pupils in regular order to read.

In conclusion the survey staff believe that as Janesville teachers secure a larger supply of suitable books and become more intimately acquainted with the selections best suited to children of varying ages, capacities, and tastes, they will be able to furnish more illustrations of the commendable kind of work noted in this report. This definite preparation, coupled with enough reading material of the right kind, will enable them to use question, comment, and suggestion which will put children in the right mood and furnish a worth while motive for the mastery of the mechanics of reading. They will enjoy so directing the pupils that these pupils will get from the literature studied a better understanding of themselves and their schoolmates, and a richer appreciation of the fact that the most commonplace experiences may be associated with the incidents that come into the lives of favorite characters in literature, and so borrow dignity from their association. This comparison and association will lend significance to events depicted in books and to happenings in everyday life and make both seem worthy of the children's best effort at interpretation and expression.

ENGLISH

The teaching of English in the Janesville grades may be classified under two broad heads,—namely, those of language and formal grammar.

It is quite generally agreed that for the elementary school pupil, the more important of these is the study of language. Familiarity with the laws of grammar does not insure correct usage. It is not an unusual occurrence to hear the members of a class recite the grammar lesson glibly and at the same time violate the principles that they are expounding. Since the chief aim of the study of English is to teach pupils to express themselves effectively, those measures should be employed which are best calculated to secure this in the shortest possible time. In primary and intermediate grades, well-selected language exercises are better adapted for this purpose than is formal grammar. For this reason, it is held that formal grammar should not be begun before the eighth grade.

The survey staff found that in Janesville the study of formal grammar has its beginning in the fifth grade. This is much too early. It is recommended that the new course of study be so organized as to eliminate formal grammar in the intermediate grades.

The language teaching observed in Janesville concerned itself chiefly with the phases here enumerated:

Stories—their narration, reproduction, and dramatization;
Oral composition, current events, etc.;
Language games;
Correction of errors and establishment of correct usage;
Memorization of poems;
Dictation exercises;
Dictionary work;
Letter writing;
Themes and compositions.

Each of these has a place in the language curriculum and if properly developed is a powerful factor in establishing correct language habits.

The supervisors saw individual cases of good work in each of these fields. Such work, however, was not general.

Good points observed that should be incorporated in the work of all rather than of a few were these:

1. Recognition by teachers of the fact that best results are accomplished when the language period is a pleasurable one and when the subject matter selected is suited to the interests, experiences, and needs of the pupils.
2. Recognition of the fact that classes must be conducted in a spirited manner and that since the class exercise is designed to teach all

of its members, contributions should be received from the majority, if not from all, rather than several contributions from a few pupils.

3. Recognition of the fact that since the language exercise is to train pupils in habits of correct English, the teacher must give them an opportunity to express themselves freely rather than do the greater portion of the oral work herself.
4. Recognition of the fact that careful and definite oral composition should precede the written work in the intermediate grades in order to insure successful accomplishment.
5. Recognition of the value of definiteness in the work. The lessons in grammar were on the whole well-conducted. Teachers were definite in their requirements and thorough in their work.

Some weaknesses observed were:

1. In a number of instances, lessons dependent for their successful accomplishment upon spontaneity and enthusiasm were conducted formally. One illustration of this was a language game which failed to accomplish its aim because its formal and uninteresting presentation made so slight an impression upon the pupils. The teacher conducted it without spirit, did not acquaint pupils with its purpose, called upon them in regular order, and abruptly discontinued the game at the end of the period. There was no effort made to have pupils arrive at the conclusion that they should endeavor to use the expression that the game aimed to teach. Teachers must recognize that the permanent substitution of correct for incorrect forms is dependent upon the forceful presentation of the correct, upon a sufficient number of repetitions to insure its automatic use, upon the satisfaction that accompanies the exercise and upon the conscious effort of pupils to use the correct.
2. Drill exercises did not sufficiently challenge the interest nor did they secure effort on the part of the majority of the class. Many drills therefore lacked intensity.
3. In general, little emphasis appears to be given to original composition, either oral or written. Most of the oral composition was reproduction. It is advisable to make provision for original work. Training in this respect may be secured in connection with suitable models.
4. There were but few indications that pupils were receiving proper training in the organization of material. Little use was made of outlines.
5. Opportunities for the inspirational study of literature were somewhat neglected.
6. Not enough recognition was given to the fact that each lesson should be a language lesson, and consequently should train children in the habits of good expression.

RECOMMENDATIONS

1. It is recommended that the strong as well as the weak points here enumerated be made the subject of discussions at teachers' meetings, so that the desirable may become general and that the undesirable may be eliminated.
2. It is recommended that in the new course of study the teaching of grammar be discontinued in the intermediate grades and not introduced before the eighth grade.
3. It is recommended that the new course of study lay greater stress upon the following:
 - a. Oral composition in its different phases,—narration, description, exposition, and persuasion. It must be remembered that to be valuable, these must be suited to the pupils' experiences and interests. Exposition in some of its aspects would be too difficult for grade pupils, but such an exercise as one calling for an explanation of how to make a kite, or play a certain game, or make a pan of fudge is well suited to the language needs of children who are living these experiences.
 - b. The use of models. We learn by imitation, and the well selected model is invaluable in the teaching of English.
 - c. Definite vocabulary work (see the manual of elementary course of study, 1916).
 - d. The selection of poems and stories. A list of poems and stories should be prepared for each grade so that the teachers will, by occasional review, help pupils to retain the most valuable of these.
 - e. Correction of errors. A survey should be made of errors in English that are common to the children so that each grade may be made responsible for the correction of certain of these. To be sure, each teacher will correct errors as they occur in pupils' speech, but will feel particularly responsible for those assigned for her year's work.
 - f. That stress be given to motivating the work in language by such means as the following:
 - (1) Literary clubs;
 - (2) School entertainments;
 - (3) School papers;
 - (4) Use of local newspapers for the publication of work on timely subjects;
 - (5) Diaries and booklets.
 - g. Emphasis upon the inspirational side of the work.

SPELLING

The survey staff believe that not a little progress has been made among some Janesville teachers in teaching spelling, so that it compares favorably with what is considered good teaching of the subject.

A few of the ways in which modern methods of teaching spelling differ from the methods once considered good are the following:

1. The source of a good spelling list is found in the language needs of children, both immediate and remote. Such investigations as those made during the last few years by Ayres, Buckingham, and Jones have helped in determining what words are in most common use in writing, and hence are the words whose spelling must be made automatic.

In some cases, the words assigned to the children in the Janesville grades for study in spelling were those already in their reading and speaking vocabularies. In other cases, the observers noted that the words assigned were of such a nature that the teacher must necessarily have been very uncertain as to whether or not the pupils were familiar with them. Under such circumstances, teachers should require pupils to furnish good sentences illustrating the use of the words. There was little of this sentence illustration required from pupils. Instead of this, teachers were frequently content with technical definitions so worded as to give the impression that pupils very frequently had only the most hazy idea of the meaning of words whose spelling they were studying. It was not uncommon for the teacher to fail to require any indication that the words studied in spelling had any significance for the children.

2. After teaching a well chosen list, the next essential is to require the pupils to write the words. This written test should preferably include considerable sentence work. In a number of cases, the pupils were tested on isolated words, either orally or by means of writing; in only a few cases were sentences containing the words dictated. However, the dictation of sentences in the spelling ex-

ercises is not enough. The real test of spelling knowledge is the ability to spell words correctly when the attention of the writer is on the subject matter itself. The surveyors are inclined to think that the Janesville teachers are neglecting to take a very necessary final step, viz., that of emphasizing the fact that pupils study spelling in order that they may automatically spell words in the written work adapted to their language needs. It has become the custom in many progressive school systems to excuse pupils in any grade from studying the spelling list used in that grade, provided their written work bears testimony to the fact that the elements of the written forms of the words needed by these pupils in that stage of their lives, have been organized into habits. This stimulating custom should become general. Certainly any pupil who spells correctly words embodied in sentences identical with the complex situations of practical life should not be required to waste his time studying spelling.

3. The number of words assigned should be less than ten in order to secure intensive initial attention, and hence enable the pupils to write a list of words entirely free from spelling errors. The number of words pronounced in one spelling lesson observed was three; in another, five; in a third, six. If adequate repetition was later provided for these words, pupils must thus have built up good permanent spelling habits.
4. The method used in teaching spelling should be one well fitted to prevent errors. The Janesville teachers evidently understand the importance of a multiform appeal. Teaching exercises requiring close detailed observation for a very limited time, followed by a still shorter test period, were occasionally seen. As an illustration of this, pupils in one grade were tracing words in the air before attempting to write them on paper. The words thus made an appeal to both the eyes and muscular sense of pupils. In other rooms, words were spelled aloud in concert during the study period. In a fourth grade observed, pupils were discovering a particular difficulty in each word before attempting to

study its spelling. The different kinds of procedure just noted deserve much commendation. Unfortunately, they were not common.

The kinds of assignments mentioned above require more time than does the testing of children on the spelling of the words so studied. It was gratifying to note that the era of real teaching of spelling, according to the modern viewpoint has arrived among some of the grade teachers in Janesville.

Well-organized phonic work in the primary grades, is one of the best preventive measures, as it secures the correct and effortless spelling of all phonetic words. The teaching of primary spelling in the Janesville grades did not satisfy the surveyors that the pupils are getting sufficient practice in writing phonetic word lists. Pupils will not, unaided, arrive at the conclusion that a list of phonetic words presents no spelling difficulty, provided the common phonogram can be spelled and the symbol for each consonant instantly called to mind. As an illustration, pupils who have been taught to pronounce the *all* words, recognize them instantly. They should be equally certain, as soon as they know the names of the letters which make up *all* and know the name of the consonant associated with each sound, that they can spell automatically, *ball, call, fall, tall*, etc. No *all* words need hereafter come into a spelling list.

In one case, pupils were attempting to write an extended list with which they were supposed to be familiar without having been given an opportunity to study the spelling of the words. They had been previously tested on the list and had not attained satisfactory standings. The teacher had a very definite end in mind in pronouncing the words a second time: she desired to have pupils see for themselves that close attention to words as they are pronounced is of great assistance to listeners. The experiment proved to teacher and pupils that failures are lessened to quite an appreciable extent when pupils learn to listen closely. The procedure just described is not recommended for general practice, but it does demonstrate the importance of prescribing for the special needs of a class.

5. Records of progress made by pupils are perhaps the most stirring incentive possible in teaching spelling. A few teachers are keeping and posting records in such a way that pupils are enabled to compare their standings received during a considerable period of time, and thus feel the necessity for doing uniformly good work.
6. Insistence on a minimum general list must not be construed to mean that each grade should not have its own local spelling list. Nor must it be forgotten that each pupil has his own individual spelling problem. An important service rendered by a good teacher of spelling is that of helping every pupil discover the reason for his mistakes in spelling. This should be followed by inciting him to a feeling of responsibility for learning to spell with facility, accuracy, and dispatch. In only one case did members of the survey staff find that pupils were keeping personal lists. This isolated instance should become the general practice.
7. Spelling tablets or permanent spelling books in which to write words, sentences, and paragraphs are indispensable if pupils are to continue to take interest and pride in good work. Excellent written spelling is seldom general in classes in which it is customary to discard the daily spelling papers after they are corrected. Undoubtedly, the results in teaching spelling in Janesville are not so satisfactory as they should be, partly because of this lack of attention to essential spelling equipment.

In conclusion, the members of the survey staff are of the opinion that the teaching of spelling in Janesville will reach a high standard as soon as all of the teachers put into practice what a few of their number are doing and at the same time guide and vitalize their efforts by becoming acquainted with the reports of recent investigations. The essentials in teaching spelling are not many, but they place upon teachers the following obligations to which they must strictly adhere if success is to crown their efforts.

- (1) To teach the spelling of the words most useful to every one to know;
- (2) To train pupils in forming automatic spelling habits in all their written work;
- (3) To teach a few words at a time so as better to secure their permanently correct spelling;
- (4) To anticipate rather than to correct errors;
- (5) To systematize the keeping of spelling records for purposes of comparison and stimulation;
- (6) To interest pupils in their individual spelling problems;
- (7) To arouse in every pupil, by every available means, such a pride in correct spelling that he will not be satisfied with anything but the correct automatic spelling of every word in every sentence he writes.

GEOGRAPHY

Formerly geography was defined as a description of the earth. The present understanding of the subject is, however, quite different and today geography is generally understood to mean *the relation of the earth to man*. Perhaps no other elementary school subject contributes more to the child's grasp of his environment and to his understanding of the life of which he is a part than does geography. It is fascinating when well-taught, but flat, stale and unprofitable when poorly taught. It is best learned in the primary grades by observing and studying nature. The weather, the winds, preparation for winter, signs of spring, etc., are topics that lead the child naturally into the study of the science of geography. In spite of the fact that it forms the basis of geography, nature study as a separate subject was not found by the survey staff to be on the programs of the Janesville schools.

It has been found that even young pupils are able, when questioned skillfully, to reason very accurately from result to cause in geography. Causal geography, under the teacher's guidance therefore, is very important, because it enables the pupils to arrive at the great fundamental truths of nature and later to apply them, thereby eliminating the necessity for memorizing many isolated facts which are apt to be confused, if not forgotten. The best geography teaching also concerns itself with giving to the pupil a rich content regarding the conditions that exist on the earth, always, however, through their relationship to himself. To illustrate, the child must know Naples as a city from which the boats leave which bring him olives and Italian

chestnuts which he enjoys. He must in imagination *see Naples*. The stereopticon, pictures in his book, and the National Geographic Magazine, for Oct. 1916, will make this possible.

It is true that children must be able to tell accurately where places are located, but the day is past when mere place information coupled with the ability to bound countries, name products, and describe the courses of rivers is called geography. The newer texts in the subject reflect the modern standards of what geography really is. They are written from the child's viewpoint and with his interests in mind. They contain, to a far less degree than the older books, formal condensed information valuable perhaps to the adult but wholly without meaning to the child. Janesville is using one of these newer texts, and if these books were supplemented by up-to-date geographical readers, the National Geographic Magazine, and a wider use of stereopticons with well-classified slides (to be used by all classes in turn) together with the necessary maps and globes, very constructive work would be possible. It is to be regretted that the necessary reference material noted above was not generally found in the schools.

The surveyors report that out of the twelve geography lessons seen, none was of the inductive or deductive type. In too many instances teachers were allowing the pupils to memorize facts without requiring them to think. *Why* should probably be the most frequently asked question in this subject, because mere fact answers are often almost meaningless to the child? There was real effort being made to furnish a content for some of the work. One stereopticon lesson on Belgium was witnessed. It would seem that lessons of this nature could be repeated for other classes in nearby schools, and that the slides could then go to another part of the city so that all could be benefited instead of just one group of pupils.

Geography is especially adapted to outside reference work. The observers saw four exercises in which outside reading had been done. This feature of the work, however, was found to be largely memory work or reading from notes material which was not meaningful to the child. In two classes, the teacher showed lack of familiarity with the subject that the pupil was presenting. Greater care is necessary if pupils are really to profit by outside reference work. They must have material which they

can grasp or else they must receive help while preparing it if they or the class are to be strengthened.

Good assignments are particularly necessary in geography, and these must at all times stimulate the child's interest. "Know the principal cities for tomorrow" is not stimulating. Following a partial discussion of ranching, the assignment, "What would you need to know about ranching before you could manage a ranch?" is much more of a challenge to real effort.

The study lesson was seen in three of the twelve lessons observed. These lessons consisted in reading and answering questions on textbook material. Geography can be profitably studied with the teacher. However, it seemed to the survey staff that study time would perhaps be more beneficial if devoted to aiding the pupil in map reading and in the acquiring of tentative information by this means. The children could later verify and reinforce their knowledge from the text.

In general, the elementary text in geography is rather brief and may be used as a sort of outline to be filled in by the teacher and pupils from outside sources. The advanced geography contains much information which the pupil can often infer for himself with the aid of skillful questions by the teacher. After the pupil has spent the study period on inference work, he is greatly interested in testing his inferences and adding to them from the text and other sources.

The use of real things as a means of teaching is always commendable, and the utilization of exhibits of oil, coal, etc., was noted. The teachers were not in possession of sufficient information about the specimens, however, to make the lessons highly interesting.

Two lessons of especial merit were seen by the observers. These were of a socialized type and the discussions were closely related to child interests. The material was made as real as possible to the pupils and the organization of the lessons showed careful preparation.

On the whole, the geography teaching in several instances seemed to the surveyors to be lacking in vitality. The interdependence of nations, the relation of the individual to the earth, the great need for geographical knowledge as a requisite for a successful business life, and the opportunity to see geographic phenomena every day are motives which every teacher can make

use of and these larger views, with a few exceptions, were not brought out in the lessons witnessed. Therefore, the survey staff makes the following suggestions:

1. That more emphasis be placed upon map reading and inference leading to the use of fundamental truths as helps for acquiring needed geographical information.
2. That visual instruction through the use of the stereopticon be extended.
3. That additional references, maps, globes, and industrial exhibits be secured and used more extensively.
4. That the elementary text especially be enriched by outside materials contributed both by the teacher and the pupils, and that the advanced geography be used by the pupils as a means of verification as well as an original source of information.
5. That the work whenever possible be motivated by making the geography lesson satisfy a real need in the child's life or help him to solve a real problem.

ARITHMETIC

In teaching arithmetic, it is necessary that teachers recognize the fact that the aim is practical efficiency in the number work that life demands. A good course of study in arithmetic is the joint product of experience in practical affairs, vivid imagination, and intimate acquaintance with the mental life of children. In organizing a good curriculum, the compilers should also keep in mind the number situations common to children and adults. Such a course makes evident that business situations must be made real through the use of suitable material in the hands of pupils: inch squares, paper money, a clock face, rulers, drill cards, tapelines, model store outfits, time-tables, and business forms are among the essentials required to put into effect an efficient course of study.

A modern course of study in arithmetic needs reinforcement through the use of well-adapted texts in the hands of all intermediate and grammar grade children.

An examination of such texts discloses that the present and future vocational needs of pupils have not been forgotten. In the choice, organization and gradation of material, the compilers emphasize the practical computations needed daily in the common occupations. In general, in their economic and social relations, all human beings need to make use of counting, and of the

fundamental operations. They need to understand how to buy, sell, and invest intelligently. They find it necessary to estimate distance; to measure ground, floors, and similar areas. They are frequently required to carry on transactions involving the loaning and borrowing of money. They are fortunate if they can make wise application of arithmetic to their own affairs in keeping accurate account of personal or household, or occupational receipts and expenditures. Pupils should become familiar with the use of graphs. They should frequently be asked to draw to a scale. Market reports and current prices should be consulted. A good text makes adequate provision for such everyday occurrences.

Such a text will not make it unnecessary for teachers to omit from it or add to it, but it will make it possible for them to successfully teach arithmetic without doing either an excessive amount of dictation work or laboring unduly in writing blackboard assignments, both of which are wasteful of a teacher's time, and, in case of blackboard assignments, frequently injurious to pupils' eyes. It is far easier to give abundant practice in the optional work for which special credit can be given to pupils with an aptitude for mathematics, if there is a textbook in the hands of pupils.

The members of the survey staff kept in mind the requirements of a good course of study, and the essential qualifications of a good text as well as the various kinds of problems daily arising in connection with natural interests and activities, in forming their judgment of the arithmetic work seen in the Janesville grades. There were twelve arithmetic recitations observed. Of these, eleven were drill exercises. The proportion was large, in view of the following considerations:

Much practice should be provided in stating the process necessary to the solution of problems without manipulating figures. Pupils should develop the ability to ask themselves such questions as will help them to decide on the processes to be employed. Significant motives for learning new processes should be enlisted. They should be incited to gather data for original problems. The local industrial situation should be called on to furnish many problems.

Teaching exercises should alternate with those designed to provide drill. The efficiency of both teaching and drills should

be tested. It is in the test, carefully conducted, that teachers have an opportunity to measure pupils' abilities, discover individual weaknesses, and so are enabled to help pupils to overcome their defects, and to see that assignments adapted to both the weak and strong pupils are planned.

Some of the good features noted in the arithmetic work seen are the following: The work on the whole was well-graded. No work generally regarded as obsolete was attempted. The interest of the pupils in the class work was frequently good. In some recitations, all of the pupils were participating. In one grade, the teacher worked every example herself in order to see whether or not she could beat the record of the pupils, and so aroused much enthusiasm. In two or three rooms, there was a model store-keeping outfit, which was evidently used. One very spirited drill in multiplication and division was seen. The assignments bear witness to the fact that something has been done in applying standard measurements and tests.

On the other hand, the drill exercises seen were deficient in the following ways:

1. Too many facts were used in the drill. Careful and gradual elimination of facts which no longer require drill and the substitution of new facts recently taught are necessary to keep the drill effective.
2. There was not much variety in the devices used. This was partly due to the very scanty amount of equipment seen. No set of well made arithmetic drill cards was observed in use.
3. Pupils were tested at the blackboard on work which required more teaching. In consequence very few pupils were able to do independent work.
4. In one room, four multiplication tables were on the blackboard in view of the pupil workers who might thus refer to them in doing their examples. It is better, in case the children are temporarily unable to take the same test or drill, to section the class and by means of a flexible assignment, give the better prepared section the test or drill planned and meanwhile teach the weaker pupils what they need to know.
5. A class at work in measurements was not required to correct the inaccurate ideas of the pupils by having them measure the room in which they were sitting.

RECOMMENDATIONS

1. Certain indispensable habits should be emphasized in arithmetic work.
 - a. Automatic mastery of the combinations and tables
 - b. Neatness and order in the arrangement of work and materials
 - c. The cultivation of pride in accuracy, speed and neatness
 - d. The ability to estimate and then quickly to check the estimate

In acquiring these habits, it is very helpful to have pupils list their standings from day to day, and by comparing present with past records of accuracy and rapidity, be incited to do better work.

2. Teachers should become acquainted with the arithmetic work in perspective. The teacher of each grade should know in detail what was done in the preceding grade and what is to be done in the succeeding grade. .
3. The importance of using worth while motives in inciting pupils to greater interest in the practical importance of arithmetic can hardly be overestimated.
4. So far as possible, statistics from such studies as geography, hygiene, manual training, domestic science should furnish necessary data for much of the applied arithmetic supplementary to that furnished by the best obtainable textbook. Much of this should have a local application.
5. Extending the use of the different standard tests and measurements which have proven successful in giving teachers information regarding the arithmetical ability of pupils.
6. Continual study of reports of investigations made in this subject and of books recording the best practice in its teaching.

GENERAL RECOMMENDATIONS ON CLASSROOM INSTRUCTION

1. That proper attention be given to the question of pupil health.
2. That adequate provision be made for increasing the professional preparation of teachers and that provision be made in the salary schedule for stimulating such increased professional preparation of teachers.
3. That greater recognition be made of individual differences through such measures as special classes, summer vacation schools, and a junior high school.
4. That a more adequate supply of teaching materials be purchased.
5. That a grade supervisor be employed.
6. That methods of instruction be modified to conform to the best current educational practices.

IX HIGH SCHOOL INSTRUCTION

I. FACTORS IN EFFICIENT HIGH SCHOOL TEACHING

Several factors are vital to effective instruction work. In the estimates made by the survey of the high school work, the following have been especially considered: first, general spirit of the school as a whole; second, effective personality and a right attitude of mind on the part of teachers; third, attitude of interest and sympathetic cooperation on the part of pupils; fourth, scholarly command of subject matter and materials of instruction by teachers; fifth, methods of presentation adapted to the needs and capacities of pupils and to a realization of the educational values involved; sixth, effective organization of departmental work, and finally adequate supervision. A brief discussion of these points may help in an understanding of the particular comments which follow.

No school can do effective work without a good spirit toward all the activities of the school. So far as instruction work is concerned, this spirit should show itself in what may be called a scholarly attitude. This means an atmosphere of orderly procedure and business like attention to each day's work. Pupils should show a readiness and enthusiasm in doing to the best of their ability whatever tasks are assigned. The whole school should give the impression of smooth and harmonious action without indication of friction or waste of time and effort. Supervisors nearly always form judgments in this regard very soon after entering a school, and the difference between a good and a poor school is almost sure to show itself in this general spirit.

Everyone recognizes the importance of vigorous and effective personality on the part of a teacher. This shows itself in the general attitude toward school and classroom problems. One type is the active, aggressive teacher who shows mastery and skill in handling these problems, while the other is the passive, inert type which takes things as they come, showing little ability to shape and direct conditions. The first type finds it easy to stimulate pupils to their best efforts and to inspire them with en-

thusiasm and zeal in relation to the subject in hand. The latter type finds it necessary to resort to threat and compulsion. This inspirational power may depend to some degree upon the specific character of the subject or upon special aptitudes of pupils, but to a far greater degree, it depends on the personality of the teacher. So true is this that the enthusiasm of pupils is aroused by certain teachers no matter what the subject matter or material.

Though this power of personality is largely a matter of native qualification, it can be cultivated and may be greatly improved by well-directed experience. A teacher should always aim to be at her best at the time of a class period. Again, a careful study of the interests and sympathies of pupils, not only in a particular classroom, but in the activities of home and social life, gives a teacher a most decided advantage. Likewise, the teacher who can enter into the community life and become identified with its civic and social problems, gains most decidedly in his or her influence as a teacher.

The third factor, that of sympathetic cooperation on the part of pupils, is closely related to the personality of the teacher. Recent changes in educational thought have resulted in a largely changed point of view regarding relations between teachers and pupils in classroom instruction. The older idea regarded the teacher largely as a task master whose business it was to force something upon the pupils which was supposed to be necessary to the learning process, or to extract something out of pupils as a test of the study and preparation which had been made. The student who goes to class with a poorly prepared lesson, and then goes away at the end congratulating himself that he escaped being called upon, largely reflects this old idea.

The present viewpoint is suggested by the comparatively recent expression, "the socialized recitation." In such a recitation, the whole class, including teacher and pupils, is whole heartedly active in developing the special work of the day. The same spirit is suggested in the following recent definition: "Education is that school experience in which the pupil is whole heartedly active in acquiring the ideas and skills needed in meeting the problems of his expanding life." In such a recitation, pupils are not only interested and attentive, but are eager and ready to respond whenever opportunity offers, and will indeed

seek for chances to ask questions and contribute discussion along the line of topics in hand. There is a special danger of suppressing or at least of failing to arouse this natural questioning attitude in pupils of high school age. One who has not visited many high schools can scarcely realize the difference in the whole atmosphere of schools in this matter. In one type, pupils are listless and passive though they may be quite orderly. They have the attitude of waiting to be quizzed or called upon to "recite" the lesson prepared. When questioned, they respond in a lifeless way and with formal, scrappy answers, apparently contributing the least that will satisfy the teacher. In the other type of class exercise, responses are ready and generous, while orderly questioning and discussion by both teacher and pupils are vigorous and enthusiastic.

Though well-recognized in our present theory, it is often forgotten in practice that education is a growth process which goes on within through reaction to external materials. The work of the teacher is therefore largely that of providing an atmosphere in which the factors of educational growth are present in the most perfect degree, and then arousing wholesome appetites which result in healthy reactions toward these materials. It is, therefore, of essential importance for good work, that the largest interest should be developed and that pupils should feel an attitude of sympathy and cooperation toward the work of each class.

Ain, it is well-recognized that every teacher should have a scholarly knowledge of subjects and materials to be used for classroom instruction. However, this scholarship is often too largely limited to the formal and traditional knowledge. This is the body of knowledge usually presented in textbooks in highly organized form, and most emphasized in academic institutions, and largely also in schools training high-school teachers. Such knowledge is usually stated in general and abstract terms with a minimum of the particular and concrete for purposes of illustration and application. By the very nature of the case, this body of material cannot be specially adapted to particular localities or to special groups of students. It must be for general use.

While this body of material is of essential importance, the practical and concrete materials of the particular locality are

of even greater importance, though much more often neglected by teachers. These materials are especially valuable because the experiences of the pupils are almost wholly within this field. It has been quite generally held as a matter of theory that one who has gained a knowledge of the general principles of a subject will readily make applications of these principles to any related facts or phenomena which may be observed. However, practice and present day investigation have shown beyond question that the inexperienced student or teacher has, as a rule, little power or habit of making these applications, without considerable study of local material. For this reason, the tendency of the young teacher and sometimes of more experienced ones, is to follow the formal and abstract method of the text and make little if any use of the local material and problems most closely related to the experiences of the pupils. For example, botany teachers often have a good general knowledge of the groups of plants and of the principles of plant activity, and, at the same time; have little familiarity with the plants of the region or of the practical problems of plant growth and propagation in the community. A civics teacher may have a fairly good knowledge of the general organization of government, and be almost wholly ignorant of the present vital problems which are demanding the attention of every good citizen, and which are finding expression in the messages of governors and president, and which are receiving attention from legislatures and law making bodies. This local material should be regarded as the most vital and valuable teaching material of the subject, and it is the failure to make use of this material that constitutes one of the greatest weaknesses of present high-school teaching.

Beyond this scholarly command of material, any effective high-school teaching demands also a thorough command of teaching methods. It is not enough to know subject matter as mere knowledge, but it must be mastered as an instrument for the teaching and training of young people of high school age. The fallacy that all the training needed for becoming an efficient high-school teacher is to know the subject or subjects to be taught, has now been pretty well abandoned. Over emphasis is, however, still placed in some quarters upon the idea of specialization in subjects. Many teachers with this notion in mind, are very desirous of reducing the number of subjects they have

to teach as much as possible, some being anxious to teach a single subject only, in order that they may be able to specialize more fully in this line. Such specialization is in great danger of having a very narrowing effect in relation to the really large and vital problems of secondary education. We need, in the high school at the present time, specialists and experts in teaching far more than we need specialists and experts in subjects.

A good command of methods demands a clear understanding of the vital values of secondary education and a special recognition of the relative values of the various subjects of study in relation to the main problem. There is further demanded an understanding and mastery of the various forms of classroom exercise with a discriminating sense of the purpose and place of each in relation to values to be realized. The forms which should be kept most clearly in mind are—assigning of lessons, teaching, testing, drilling, and developing effective expression. It is not appropriate here to go into any extensive discussion of these different phases of teaching, but it will assist the purposes of this report to point out briefly one or two sources of special weakness in present high school practice.

In the first place, too little attention is often given to a good assignment. Present discussion of teaching pupils how to study, and of supervised study, is emphasizing the importance of directed study. Such study must be directed toward definite ends and these ends or objectives must be put before the pupils largely in the form of problems which become effective motives for concentrated effort, providing the pupil is led to see their relationship to his world of interest and experience. It is the business of the assignment to help pupils see these worth-while problems in relation to new materials. This means more of questioning and development and less of mechanical fixing of pages, paragraphs or topics in any good assignment.

The teaching process is a natural continuation of the work begun in the assignment. In this part of the work the so-called "problem method" should be more largely used. Vital problems always arise out of the common experiences and situations of life. Questioning should therefore begin with these familiar experiences rather than with the formal material of the text. Skillful questioning should lead pupils from these familiar things in the direction of more difficult problems in re-

lation to the topics of the day's lesson. The teacher should then assist pupils by further skillful development to organize the knowledge gained, bring this into relationship with the formal knowledge presented in the text, and develop wider applications. In connection with this final organization, needed terms should be applied to the ideas developed and definitions should be formulated. Such a method may be called vital because it deals with those materials and experiences which have real meaning to the pupils and because it results in real understanding of the problems involved. It is to be noted that definitions and general statements are here made the final result of the development rather than the means of approach. This problem method is nothing more than the application of the familiar pedagogy which says that good teaching should begin with what is known and concrete and proceed from this to the abstract and the unknown, and yet it is the general opinion of high-school supervisors that it is the exception to find the method here described skillfully used in high school work. *Unfortunately the formal method of the text is far more commonly observed.*

This so-called "problem method" of development can be applied to most if not all of the high school subjects. It is especially applicable to the content subjects such as science, civics, history, and even to considerable extent, English and mathematics. It is the method based upon the natural operation of the young mind in approaching any new field of thought. In fact, it is the common method of meeting the every day problems of life. It makes large use of the reasoning activity while the formal method overemphasizes the use of memory. As the student accumulates and organizes larger knowledge in any line, he comes to use more and more the formal or deductive method, but the young student finds this method difficult and through its approach often gets mere verbal knowledge or at best only vague and confused ideas, failing entirely to see the real meaning of instruction.

Skillful development should be followed by abundant review, and adequate amount of drill work and some topical study. In all the steps, and especially in the organization, the review and the topical work, there should be well-planned effort to get good English and effective expression in all classes. Weak work here

is undoubtedly responsible for much general weakness in English.

Effective drill work is especially neglected in the high school. The tendency is to apply university ideals in this matter rather than those of the grades which are much more applicable to high school needs especially in the earlier years. Every new subject has a language of its own which is very largely new to the beginning student. Much of the confusion in pupils' minds is due to lack of familiarity with the vocabulary of this language. As new ideas are developed, they should be labeled with proper terms and then the teacher should help pupils establish and fix associations between symbols and meanings by first developing as many associations as possible and then fixing these by adequate repetition through vigorous drill work.

Again, skill in the use of the tools of knowledge can be gained only by much practice. Such practice should be furnished by a large amount of vigorous, well-varied drill, with the use of as many effective devices as the resourceful teacher can develop. Without question, skill, alertness and readiness in the application of knowledge could be brought to a much higher standard in most high schools, by a more adequate amount of work of this kind. This general statement of viewpoint is made for the purpose of showing the basis on which high school work is judged.

Department organization and adequate supervision will be given fuller consideration in the section which follows.

II. OBSERVATIONS ON HIGH SCHOOL TEACHING IN JANESVILLE

With these considerations especially in view, a general estimate may now be made of the high school instruction seen in the survey.

First of all, the high school is deserving of high commendation for the splendid spirit of sympathetic cooperation and business like attention to work, shown by the school as a whole. In this respect the school is ranked among the best high schools in the state. This spirit shows itself in the orderly movement of pupils about the building, in business like attention to work in the study rooms and in orderly procedure throughout the daily program. In a special degree it manifests itself also in the attitude of students toward the work of the various classrooms.

Such a spirit contributes very largely to the general efficiency of instruction and is much to the credit of the management.

This spirit shows itself in a special way in the readiness and efficiency of pupils in their responses to the problems and questions of the various classrooms. Much of the spirit of the socialized recitation was observed throughout the classroom work. Along with this spirit was manifest in the school as a whole a good ability in the effective use of English as a means of expression. There were indications that some especially good training along this line was being developed.

While the school was strong in the above points, the regular instruction work itself was not considered above the average for similar high schools throughout the state. Out of the seventeen teachers here included (manual training, music, drawing, physical training, and one domestic science teacher omitted), one was rated excellent, five very good, six good, four fair and one poor. It should perhaps be stated that the teacher rated poor was teaching a subject considerably out of the line of her regular work.

A number of points of general strength should be commended. First, practically without exception, teachers showed a scholarly command of the subjects being taught, at least on the side of general or formal knowledge of the subject, i. e. such knowledge as is commonly found in books. The use of vital, local material was not so much in evidence.

Again, teachers were generally getting good cooperation and were showing a sympathetic attitude in the development of their subjects. Teachers were also, with few exceptions, possessed of vigorous and pleasing personalities which gave evidence of exerting a wholesome and stimulating influence upon pupils. However, the decided inspirational power which is desirable, while found in a number of cases to a marked degree, was regarded as the exceptional thing rather than the rule.

Along the line of effective classroom methods much can be said in commendation of the work. Most of the teachers showed the poise and much of the skill which comes from experience and mastery of classroom practice. However, methods on the whole, were regarded as showing more of the formal, bookish type of work than that of the vital point of view which is the central thought connected with the present reorganization spirit. The

experiences of pupils, the local problems of the community, and the current world happenings might have been utilized in much of the work to a far greater extent with beneficial results. In many cases the questioning was adapted to the formal rather than the problem or vital method of approach. For example, in one class a good part of a period was consumed in trying to get pupils to formulate an exact statement of a definition. In the social studies, so far as seen, there was a tendency rather to organize formal knowledge than to develop understanding by developing relationship with present day problems. The science work seen was somewhat stronger from this vital viewpoint, but there was a tendency to develop a stereotyped form of laboratory work which was imposed upon the pupil rather than developed out of the needs and problems of his own experience and those of the practical world about him. Some questioning of several students in connection with experiments which had been worked and were being written up, indicated that these pupils had done little vital thinking in connection with the working of these experiments. This does not apply to all work seen. Some very good laboratory work was in progress and in some of the class work teachers were utilizing the problem method to quite a degree. The criticism here speaks only of a tendency which appeared to characterize too much of the work.

A good deal of strong work was seen in connection with the English and foreign language departments, although in some cases the emphasis in the literature and reading work appeared to be too much on logical organization of the subject matter itself, rather than on the more vital aim of developing appreciation, good habits of thought, high ideals of action and skill in the use of an effective tool. As previously suggested, good results in oral and written composition were especially noticed. Oral English which is most often neglected, was regarded as especially strong.

Very little effective drill work was seen in the classes visited. While it is entirely possible that much of such work is done at various times, it is nevertheless believed that general results in most classes might be greatly improved by a larger amount of such work. High-school teachers might profit greatly by taking opportunity to visit some strong grade teacher occasionally for the study of devices for effective drill work.

Such devices could often be applied advantageously with very little modification to high school work. Such drill work to be effective must be vigorous enough to arouse interest in the very activity itself; it should have good variety; it should stimulate a wholesome spirit of rivalry; it should be adapted to the slower as well as the keener pupils of the class; and it should be brief but frequent.

The departmental plan of limiting each teacher's work to one or at most two subjects, seems to have been pretty closely followed in the arrangement of all the instruction work. While this is probably desirable as a general plan in as large a high school as Janesville, nevertheless, there is a decidedly narrowing effect in too close adherence to this plan. There is much danger of teachers coming to have the viewpoint of teaching subjects rather than emphasizing the viewpoint of developing young people. From the latter point of view, training should be broad rather than intensive, and teachers should therefore keep themselves broad with reference to many subjects rather than one only. It is therefore regarded as very wise policy frequently to give teachers work in several lines. It is even wise with strong teachers occasionally to give them some new subject as a source of fresh material and new enthusiasm. Such a plan nearly always results in better appreciation of the pupils' viewpoint and a greater understanding of their difficulties.

While this is true from the standpoint of individual teaching, there is need for systematic organization of all the work of each department under a strong centralized plan. It is believed that it would be a source of greater strength in the Janesville high school, if departments such as English, social studies, mathematics, and science were organized with greater unity of plan. This would require a thoroughly strong teacher who should act as head of each department and who should be responsible for all the work of the department, which should of course be planned under the direction of this head in conference with the assistants and with the principal or superintendent. This plan is here suggested as a possible improvement which should receive careful consideration.

Finally, strong instruction work in a school as large as Janesville depends in a large degree upon wise and effective supervision. A good deal of this has no doubt been given in the past.

However, after considerable conference and discussion with the teachers and the principal, the surveyors concluded that this supervision could be much strengthened. This could be accomplished through more frequent visits by principal and superintendent and also by a careful follow-up plan by which the newer teachers might receive frequent visits followed by conferences on their work until they had fully caught the viewpoint of the school and had perfected their methods of work, after which less frequent visits would be necessary. It is a very general conviction that such helpful supervision is a very large factor in developing strong teachers and in unifying the ideals of a school. It is recommended that a more perfect organization of this phase of the work be given careful consideration.

SUMMARY OF RECOMMENDATIONS

1. A general effort on the part of the teaching force to utilize in larger degree the vital and current practical material which is most closely related to the life of the pupils and the community.
2. A further effort to use more largely the problem or vital method in developing the subjects of instruction.
3. More vitalized drill work in connection with class instruction.
4. Greater unification of the work of each general department of instruction in the high school to the end of correlating the work of all the teachers in the department as closely as possible about common purposes.
5. More frequent and more systematic visiting of the work of different teachers for the purpose of helpful supervision.

X SPECIAL COURSES AND INSTRUCTION IN SPECIAL SUBJECTS

SECTION I—MUSIC

The Procedure.

During the morning Mr. Dykema, observed by his three assistants, conducted a test in a first grade room. After this, four upper grade rooms were tested, each one by an investigator working alone. In the afternoon all went to the high school, to observe the work of the high school chorus; then the three assistants, observed by Mr. Dykema, carried on tests in three grades,—two lower and one higher, and finally Mr. Dykema, observed by all, concluded the day by a test in a 6th grade. Four buildings were visited. A complete test would entail working with all or nearly all of the children at least once and visiting some of them at least twice.

The Material Used for the Survey.

The work done in testing followed closely the outline prepared in advance, which is given below:

Notes for Survey of School Music.

1. Purpose:

(a) General

- (1) To ascertain what effect the teaching of school music is having on the life of the children both in and out of school.
- (2) To determine what aspects of the school music teaching are particularly valuable so as to reinforce these and also what parts are weak and need either strengthening or eliminating.
- (3) Insofar as possible to determine the causes for (1) and (2) and to make such constructive criticisms as will assist in giving music its proper place in the school.

(b) Specific:

* In the observations on school music Professor Dykema was assisted by three of his students, Miss Maude Glynn, Miss Frances Leibing, and Miss Hilda Mayer. The observations were made, June 8, 1917.

Our inquiries will proceed along four lines, aiming to determine:

- (1) the function of music in
 - (a) the school
 - (b) the home
 - (c) the community at large
- (2) the spirit or interest in which the children enter into the music work
 - (a) in performance
 - (1) of songs learned
 - (2) of new songs to be learned
 - (a) by rote
 - (b) by note

A similar test will also be applied to the question of exercises.

- (b) in listening to music
- (3) the knowledge
 - (a) of general music history and biography (in very elementary form)
 - (b) technical facts about music notation
- (4) the technical power of the children as manifested in their ability to attack new material, especially that to be done by note.

II. Procedure:

In this first test, all that will be attempted will be under two headings:

A. Written Work—B. Singing. These will be subdivided as follows:

A. Written Work

- (1) for function
 - (a) school (b) home (c) community as above
 - (2) for knowledge
 - (3) for appreciation
- } these to combine material
under spirit, knowledge,
and technical power above

B. Singing

While most of the singing will be by the class as a whole, there will also be some attempt to have individual tests if time allows. The tests in singing will endeavor to bring out

- (1) Spirit
 - (1) in songs which the children choose
 - (2) in songs which the teacher chooses
- (2) Repertoire, with divisions as above
- (3) Ability both in rote and note material

The points to be looked for here are:

- (a) tone
- (b) correctness
- (c) interpretation, involving phrasing and general beauty of delivery, including clear *musical* enunciation.

III. Special Questions:

Intended to cover most of the above headings.

- A. (1) Questions for the pupil: to be written if possible**
- If you could arrange the program in your room, would you give more or less time to music than is now given, or would you leave it just as it is? Why?
 - Do you ever use at home anything you have learned in the music period at school? Tell just what if anything.
 - What songs that you learned at school have you ever sung out of school? Which, where, when?
 - Name the five songs you like best to sing—these need not be school songs if you like others better. Indicate where you learned each of the songs.
 - Tell what other music than singing you like very much. Name some particular pieces and the instruments that play them.

(2) Questions for the Room Teacher:

- What effect, if any, does the music given in the school have upon the general work of the school? Be as specific as possible.
- If music is ever used in your room other than during the music period, tell when, how often, for what reason, and what the effects are.
- When the supervisor of music visits your room, are the benefits to the children greater when you teach the lesson and receive criticisms from the supervisor or when the supervisor teaches the lesson? How and why?
- If you could arrange the program in your room, would you give more or less time to music than is now given or would you leave it just as it is? Why?

B. Knowledge

- For the pupil
Place a quarter note where both high and low doh or the keynote are to be found after each of the following signatures: (three will be given)
- Place the bars in the proper places of the following music: (Material of increasing difficulty throughout the grades will be given.)

C. Performance

- Learning a song by rote:
Song to be taught grades 1, 2, 3, and 4: "The Tailor and the Mouse." Observation will be on the number of times required to sing it to the children before the class as a whole can reproduce it correctly.

The song for grades 5, 6, 7, and 8 is "Under the Greenwood Tree."

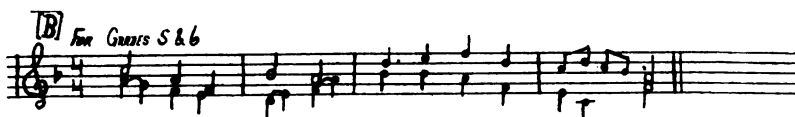
Both of these are found in "Grammar School Songs" by Farnsworth, published by Scribners' Sons.

- (2) Sight Reading: An exercise to be placed upon the board or on a chart. The exercises, presented on large charts, were these:

EXERCISES USED FOR SIGHT SINGING TEST



SUMMER IS COMING, SOON WE'LL BE AT PLAY.



HEAR US, DEAR FATHER, - HEAR THE SONG WE SING TO THEE



THE BIRDS AND THE FLOWERS ALL FEEL THAT IT IS



SPRING. COME JOIN THE GLAD CHORUS, COME MAKE THE ECHOES RING.

- (3) For grades 5, 6, 7, and 8
Of what songs are these notes the beginning?
(Well known songs will be selected.)
- (4) Give the scale names of the tones in the two above examples.
- (5) Write from hearing six times the exercise which is dictated to you—a different one for each grade.

Summary of What Was Expected.

From the outline, it is evident that the investigators hoped to find

- (1) That music was playing an important part in the lives of the children both in and out of school, adding pleasure and

significance to many hours besides those specifically assigned to music study.

- (2) That, inspired by the love of song, the children were gaining steadily individual command of the simpler technical details so that at the end of the grammar school course each child would be able to sing alone his part in any comparatively simple music, such as an ordinary hymn tune.
- (3) That some guidance was systematically being given to help the children to know and enjoy the better kinds of music when they hear them.
- (4) Although not mentioned in the notes above, it was hoped that there might be found at least preliminary steps for the introduction of systematic instrumental instruction in the grades.

The Report

The brief time, one day, taken for observing the work in the schools and the somewhat unsettled condition of the school music, due to the fact that the day for visiting fell near the end of the year and just before a special music festival, which for some two weeks or more preceding had occupied most of the music periods, makes this report somewhat fragmentary; in fact, hardly more than a beginning of a real study that might well be carried out with profit.

The General Attitude Toward the Music

The music in the schools seems to have the approval of the teachers and pupils to a very large extent. Most of the teachers feel that the time allotment at present is about the right one. The majority of the children would welcome more time given to music. The main help that the teachers mention is the change and recreation which singing affords in connection with the other studies.

A Contrast Between School and Life

The music seems to stress more than is necessary the *school* music aspect, i. e., it is not of a type that enters vitally into the life of the child outside of the music period. There were few evidences of music being used in other subjects, few instances of its being used as a recreation at times other than the music period. Moreover, although it was encouraging to find much evidence of the knowledge and frequent use of patriotic

songs, and possibly this is all one can expect under present conditions, there seemed too little mention of the music learned in the school being used in the home or the community at large. This may be explained by the small amount of folk songs which are taught to the children and also the lack of songs of a rollicking and highly rhythmic nature. In other words, the school does not seem to supply material which competes successfully with children's interest in popular songs.

Children are Interested

The interest of the children in their music work seemed to be good throughout the system from the lower grades through the high school. While as is natural, they are more interested in the songs than they are in technical work, especially exercises, they attack this latter material in good shape. This final statement applies only to the grades, because there is practically no technical study carried on in the high school. .

No Training in Listening

Moreover, the entire statement applies practically to the performance by the children only. They are singularly lacking in training and knowledge in music to which they are to listen. There is apparently an entire lack of information concerning the great composers of instrumental music and a knowledge of compositions by them.

Knowledge of a Fair Average

The children manifest a fair degree of knowledge about the technical facts of music notation insofar as these are necessary for the reading and singing by note. It is probable that the means we used of testing—that of writing and interpreting written music by eye rather than voice, is strange to the children. Although much writing of music is unnecessary, some training is very desirable.

Technical Ability—i. e. Singing by Note

The technical power in the rendering of music by the children has reached a good standard so long as unison singing is carried on. The part work, however, is hardly up to grade, at least in the attack of new material. We are glad to say, however, that

we heard some excellent part singing of learned material in the 7th grade. The main faults in the sight singing seem to be along rhythmic lines. The children lack independence, surety, and the ability to attack new problems. We are not sure that they have been given enough intellectual drill in connection with their "rhythmic patterns" to enable them to use their patterns in new and strange combinations. The dotted quarter followed by an eighth note seemed to trouble several grades.

The Tone is Good Except in Upper Grades

The tone used by the children is good in the lower grades, but rather poor in the period where the changed voices of the boys appear. The eighth grade which we heard was quite unsatisfactory from the point of view of tone. Moreover, the treatment of the boy with the changed voice has not been given sufficient attention.

Suggestions for Improvement

The main points of attack in improving the work will be along three lines: 1st, better and more varied material for singing; 2nd, the introduction of opportunities to listen to music other than that which the children themselves produce; 3d, a change in the spirit of the instruction. We shall deal with these somewhat at length.

1. **Material.** The series of books now in use throughout the school is quite inadequate from either the point of view of song material or method of technical development. It is one of the older series and does not reflect the modern spirit of school music teaching which emphasizes the need of a large amount of attractive song material so arranged that the technical powers of the children can be largely developed in connection with song. This would mean the replacing of the present book by one of the newer and preferably by two of the newer series of music books. We say two because the teaching of music reading to children is very similar to the teaching of children to read literature, with this important additional point, that practically every home either through its own resources or through the public library can provide the child with reading other than his story book at school. The supplementary idea is in

fact more important in music, if possible, than in literature. Janesville should be so provided with music books that each child should own one which he could and would gladly take home with him for use there,—a condition which apparently does not obtain at present; and this should be supplemented by a different book which the school would supply for reading (singing) in the classroom.

In deciding upon these books, it is essential that much attention be given to the inclusion of folk song material. This is a field which is just being opened up now, and we are realizing that the child is entitled to the heritage of folk music. This same principle may be stated in connection with the material which the supervisor uses for rote songs. It should be much more largely folk material rather than the made songs by modern composers for children. Moreover, if the material is to appeal to the boy, especially so that it will satisfy that need that is now met by the singing of ragtime, it must be of a more vigorous and hardy character than is usual in the modern-made song. The rollicking song which we used for the primary grades,—"The Tailor and the Mouse," with its nonsensical chorus but with its vigorous rhythm throughout, is the type of song that we have in mind as the new element to be added to the children's repertoire.

2. *Listening Material.* The Janesville schools are backward in the matter of giving the children the opportunity to listen to music other than that which they themselves produce. We have only to mention the fact that progressive schools all over the country are making it possible for children to hear frequently during their regular school hours and in the classroom a large amount of material that is adapted to them and that they love intensely. We refer to the introduction of the phonograph as a part of the music instruction. We should be reluctant, however, to see this introduced and have it result in a reduced amount of time now given to the present type of music. The children need all the time they now have for learning to perform. It ought to be possible, however, to find five minutes additional a day in which the children could become acquainted, through appropriate material and proper guidance, with some of the world's great treasures which the phonograph is waiting to give them. While it is also valuable to have concerts by

the supervisor, by talented teachers, and by other musicians (here should be mentioned as especially valuable organ recitals at monthly intervals given in some of the larger churches of the city), these are less easy to obtain regularly, and, moreover, have certain extraneous personal elements which compare unfavorably with the impersonality of the phonograph.

3. A Change in the Spirit. We wish to commend the energy and devotion which the supervisor has succeeded in imparting to both teachers and pupils. The new spirit which we have in mind is one that is difficult to describe, but is so important that we shall attempt it.

Insofar as the present conditions are unfortunate, they arise, we believe, from the feeling of pressure which almost harries the supervisor. With her desire to accomplish large results in the comparatively short time allotted to music, she has possibly attempted to do more work than is wise. It is an open question as to whether there would be a gain if the supervisor were to do less actual teaching and were to have monthly meetings with the teachers in classes,—the primary teachers in one group, intermediate in another, or in some such selective arrangement.

Two results have followed: First, the supervisor has been pushed and has constantly applied a goad to the children; and secondly, she does not give enough time and thought to leading the children to appreciate the beauty of music and to allowing it time to impress itself upon their minds. As a result, the children are lacking in independence and a deep love for music.

Every supervisor needs to accomplish two things in herself, namely, the increasing of her own delight in music, and the learning to believe that power is more important in children than the getting over any certain amount of material. These conditions will be reflected in the pupils by getting them to take time to enjoy music,—both in producing and in listening to it, and by making them more self-reliant, more independent, more able to work out their material alone. It ought to be a common part of the music work for the supervisor, and the grade teacher also, in her absence, to give the children their key note, tell them to sing a new song or exercise through, and then actually leave them alone until they have gone through with it.

An exemplification of the faults will be found in the matter of the two-part singing. Both our own tests and such informa-

tion as we obtained through conversation leads us to believe that the usual way of carrying on new part work in Janesville is to take first one part and then the other so that two-part singing is practically the putting together of two melodies comparatively unrelated at first. The children should have simple enough two-part material at first so that they can sing the two parts at the same time and still appreciate the lovely effect that is produced when two tones are sung simultaneously.

Music in the High School

While we saw very little of the music in the high school and while we realize the difficulties of this problem, it seems to us unfortunate that no arrangements are made for carrying on systematically the good work which has been begun in the grades. The high school ought to offer more advanced singing for those children who have done well in the grades. It ought to offer opportunities for appreciation work which should continue that which we have advocated for the grades and which at the present time should attempt to remedy the pitiable lack of training along these lines. There ought also to be some provision made for technical musical study, presumably in harmony, for students who may wish to do something with music later in life.

Possibilities in Instrumental Music

The commendable assistance given to the high school chorus by a group of instrumentalists brings up the question of a considerable extension of purely instrumental work. These high school players would with careful preparation form the nucleus of an orchestra which could add a fine element to the musical life not only of the school but of the entire community. The dignifying of such an organization would necessitate for its perpetuation a systematic plan for preparing players in the grades. This would mean the introduction with the grades of some of the plans for instrumental work in the grades which are now being pushed vigorously by a large number of the progressive public school systems throughout the country.

Conclusion

The above report is by no means complete and is certainly not to be considered as an entirely satisfactory analysis of the situation. It is submitted with considerable hesitation because

we realize that our observations are based upon an insufficient knowledge of affairs which was, moreover, obtained at a time that was not typical of the year's work. But we have felt it worth while to submit these impressions because the work in music in the Janesville schools shows such progress already and gives such hope for improvement that it can profit by such queries and suggestions as we have presented.

SECTION II

DRAWING

Art Education in public schools is comparatively a new feature. The forty or more years in which it has been tried in this country indicate the demand which has arisen for it.

Briefly stated, there are four aims in teaching art:

1. To develop ability of the child to express himself. Such ability is developed by two types of work. One is the free illustration in the lower grades, which helps the child visualize. This process of graphic expression serves to clarify his ideas. The second type of drawing portrays facts in science,—biology, physiology, and geography. Usually a drawing of this type is more enlightening than words, both to the one who draws and to the one who inspects the drawing.
2. To cultivate taste in design and color, and to produce beauty in both. Art education is a failure if it does not result in a demand for beauty in dress, in the home, and in the community, and in efforts to meet this demand.
3. To create an interest in and appreciation of beauty in nature and in one's environment, and an appreciation of the accomplishment of artists who have expressed themselves in various mediums. Art teaching from this standpoint should include the study of architecture, painting, and sculpture.
4. To cultivate ability to read working drawings and to make such drawings for construction problems made in manual and industrial arts classes.

In making a study of a course in Art Education, with the above mentioned aims in mind, one examines the work to discover if the essentials that form a basis for accomplishing these aims have been observed in teaching. In each type of drawing there is a sequence in the steps that lays a foundation for effective results. These fundamentals should form the backbone of a flexible course that may be adjusted to suit individual pupils and classes in various localities.

Two days were spent by the writer in observing the teaching of drawing in Janesville. The work of both the supervisor and of the grade teachers were examined. Some time was spent in conference with these instructors. A request was made for three sets of drawings, each set to represent work from all of the eight grades. Each was to illustrate one of the three types of drawing in which the pupils had been taught.

TABLE 33.—*Distribution of Scores in Drawing—Set I Paper Cutting Quality*

Grade	No. of pupils	A	B	C	D	E	F	G	H
I	33	9	23	1					
II	21	2	11	8					
III	39	2	2	4	25	6			
IV	24			8	12	4			
V	34	14	3	12	5				
VI	23			5	2	3	13		
VII	24		1		4	5	9	5	
VIII	19				5	3	2	4	5
Total	217	27	40	38	53	21	24	9	5

The specimens in the set of drawings graded in Table 33 were decorations done in paper cutting, either borders, or circular or square designs. The exercise was similar in all grades. The cutting was freehand and the repeats made by cutting the paper folded. The specimens were sorted by the writer into groups which in her judgment represented increasing merit, each group differing from the next by approximately equal steps. Class A has the least merit and Class H is made up of drawings by no means perfect, but the best submitted. The judgment of excellence was based upon quality of design, as to shapes and spacing and upon technique.

TABLE 34.—*Distribution of Drawing Scores—Set II—Nature Drawings Quality*

Grade	No. of pupils	A	B	C	D	E	F	G	H
I	38	14	24						
II	27	3	16	8					
III	29		11	15	3				
IV	38		12	12	9	5			
V	36		4	18	13	1			
VI	38				17	13	8		
VII	29				2	3	4	15	5
VIII	26					1	11	8	6
Total	261	17	67	53	44	23	23	23	11

Table 34 the result of a similar process of assorting a set of nature drawings, done in colored crayons, a tulip being used as the subject in grades 1-4 and vegetables or fruit in grades 5-8. The basis for the judgment of excellence in these were form, color, light and shade, and technique. As in Table 33 Class A comprises the poorest drawings and H the best, the variation from one class to another being about equal.

TABLE 35.—*Distribution of Drawing Scores—Set III.*

Part 1. Quality						Part 2. Quality					
Grade	No. of Pupils	A	B	C	D	Grade	No. of Pupils	A	B	C	D
I	17	8	9			V	25	15	8	1	1
II	26	4	14	8		VI	39	23	10	6	
III	27	2	8	14	3	VII	32	11	7	10	4
IV	30		8	18	4	VIII	28	4	3	10	11
Total	100	14	39	40	7	Total	124	53	28	27	16

Table 35 shows the results from assorting a set made up of two kinds of drawings, showing the appearance of objects. The first four grades did a free illustration of a game of ball, and the four higher grades drew a flower pot from the object when placed below the level of the eye. The writer wished a record of drawings of these types, and selected these subjects because free illustration is usually taught in lower grades and drawing from the object in higher grades.

In assorting this last set the Thorndike scale was of assistance as it is made up of drawings of these kinds. The degrees of merit, however, were not estimated according to that scale, but by letters to accord with Tables 33 and 34. The classes are lettered from A to D only, as the two kinds were assorted separately, A representing the poorest, and D the best in each. The merits correspond approximately to those of the Thorndike scale as given below:

Table 35, Part 1.

A—2.4	degrees	of	merit
B—3.9	"	"	"
C—6.5	"	"	"
D—8.6	"	"	"

Table 35, Part 2.

A—10.5	degrees	of	merit
B—12.6	"	"	"
C—14.4	"	"	"
D—16	"	"	"

There is an increase of approximately two degrees of merit from class to class.¹

From a study of these tables it will be seen that the greater number of drawings possess intermediate qualities of merit, and that just as good work is done by some pupils in lower grades as by others in higher grades. Overlapping of abilities in drawing is quite marked. It will also be seen that progress is not continuously sustained, the number of pupils attaining the higher degrees of excellence being very small. This may be the result of wide variations in native ability within a grade tending to retard the progress of all, if all are taught the same thing at the same time.

These observations lead to two conclusions: 1. The course surveyed is not arranged and carried out so that the rate of progress increases uniformly. 2. If children as now classified differ so much in ability that progress cannot be sustained to a greater degree, the drawing lesson should be arranged so that children of more nearly equal ability may work together. If the need for readjustment of classes according to ability cannot be met in a large way, at least pupils within one classroom may be taught in groups, according to their ability.

Conclusions and Recommendations

Opportunity for initiative was afforded especially in the higher grades. Technique was not insisted upon at the expense of the child's originality. The criticism given pupils was such that they were encouraged to further effort. Furthermore pupils showed unusual power of attack.

The course can be improved by relating it more directly to other phases of education. Too much of the material of the present course is unrelated to the needs of the children. This condition can be remedied by more careful supervision. The supervisor should keep closely in touch with what the children are doing in other subjects. She should enlist the cooperation of the teachers in her efforts to correlate drawing with the other subjects. Besides having a good art training the supervisor should be thoroughly acquainted with the principles of teaching and of psychology. The addition of construction prob-

¹ The Thorndike scale could not be used in assorting the other types of drawing represented in Tables 33 and 34 for as stated by the author himself in his "Measurement of Achievement in Drawing," the scale is not adapted for use with these types of drawing.

lems to the present course would afford an opportunity for applying principles of design and color. The work in illustrative drawing could well be associated with the reading, language, geography, and history. Poster making could be an outgrowth of the need for announcements and advertisements for the school.

Mechanical drawing might well be taught to the grades that take bench work in manual training. Boys may be taught this, while the girls are given applied design in connection with household arts.

The essentials of the different types of drawing should be more thoroughly emphasized in the course than at present.

It would be desirable to have in each building enough models so that prints and copies need not be used. Sufficient illustrative material is desirable to create ideals in design and color and to permit adequate study of the technique of all varieties of work.

The proper distribution of the supervisor's time is a difficult problem in a city of this size in which she spends much of her time in actual teaching. If a supervisor does one-third or one-half of the teaching the grade teacher is likely to lose sight of the larger relations of the problem and to fail to comprehend the needs in drawing.

It would be better therefore if the supervisor were to do less teaching of pupils than she now does. She should spend more time in observing the drawing teaching of the regular teachers to see whether drawing is being taught as it should be taught and if it is not to indicate how it should. This is the kind of supervision of drawing for which she is being paid. When she devotes her entire time to teaching children she is merely a teacher of drawing and in no sense a supervisor. It is not to be understood that she should never teach a class of pupils. On the contrary she should do this frequently but *for the purpose of demonstrating to the teacher how to teach a particular type of lesson*. Teaching of this sort should be preceded by conference with the teacher in which the aims of the lesson, the principles to be illustrated and the method to be used are carefully discussed. The lesson should be followed by a similar conference with the teacher to make certain that she has grasped the essential points of the demonstration. The supervisor will need

to spend more time in careful sympathetic constructive supervision and in conducting teachers' meetings where art teaching is the subject of discussion than she now does. More attention should be given to assisting teachers to adjust the course to meet the individual needs of pupils and classes. Finally the supervisor should form a class in art instruction for the teachers of drawing. This should be a part of her supervisory program. The class should meet periodically.

SECTION III

AGRICULTURAL DEPARTMENT

Growth of Agricultural Departments in Cities

An idea has been prevalent that an agricultural course is adapted only to the needs of the rural high school. There has been, however, a growing tendency in the last few years to develop departments for this kind of work in city high schools as well as those in the country. Three arguments may be advanced in favor of agriculture in cities. First, a steadily increasing number of tuition pupils from the country have been asking admission in city high schools. Agriculture is an especially desirable line of work for these pupils, most of whom will go back to the farms. Again, many city pupils are very easily interested in agriculture and many of them may be led to seek farming as their vocation, thus helping to overcome the effect of the rapidly growing tide from the country to the city. Farming offers a most desirable occupation to many of these city boys and girls.

A third important value of an agricultural course in a city high school lies in its beneficial effect upon the entire rural problem of the region. Everything that can be done to raise the general intelligence and efficiency of the farming industry and to elevate the ideals of living among rural people, has a very direct helpful influence upon the city or town which forms the commercial center of the region, as well as upon the rural people themselves. This is true not merely as a matter of general social uplift but because the more prosperous and cultured a rural population in any region becomes the more will this population enter into trade and business relations with the town or city

which is able to supply its higher needs. Thus by sending out an intelligent and well-trained class of young people to the farms an agricultural course may be made a most directly helpful business asset to the city.

Growing appreciation of these benefits has led an increasing number of cities to develop, during the last few years, agricultural departments in connection with their high schools. In addition to Janesville, the following Wisconsin cities may be cited as examples of this tendency: Green Bay, Marshfield, Neenah, Waupaca and Chippewa Falls. Three of these have organized agricultural departments within the last two years. Outside the state, the same tendency is shown in many city high schools. Cleveland has just established a special agricultural course in connection with both her technical high schools and the number taking these courses is rapidly increasing. The Gary schools are just beginning to give special attention to an agricultural course for the high school, a specially trained teacher for this subject having been employed during the last year for the first time.

Favorable Situation of Janesville

A survey of Janesville conditions shows this city to be especially well situated for a course of this kind. The city is located in the center of a large and remarkably fruitful farming region, of which the Janesville high school forms the natural educational center. Land in this area brings from 150 to 200 dollars per acre. The average distance of the five nearest high schools surrounding Janesville is about fifteen miles. Assuming that half this distance should naturally belong to the Janesville territory, we should get a farming area of somewhere between one hundred fifty and two hundred square miles. As shown in another part of this report, there are thirty-eight rural districts in this area. During the years 1914, 1915 and 1916 there were graduated from the eighth grades of these districts 119 pupils, who then were eligible to enter the high school. During the last year there were actually 91 tuition pupils in the Janesville high school. A very large per cent of these rural pupils are going back to the farm and therefore need a training adapted to the needs of that work. Likewise this rich and fruitful region offers unusual attractions to those city young people whose interests naturally turn in that direction. That the providing

of a good agricultural training in the Janesville high school will result in a great benefit to this great farming region and indirectly to all the business interests of Janesville, few people will doubt and especially after carefully noting the results of this survey in relation to this course.

Growth of the Course

The agricultural course was introduced in 1910. The number of pupils taking the course has steadily increased as shown in following figures:

Enrollment by Years

1910-11—11 pupils	1913-14—28 pupils
1911-12—15 "	1914-15—53 "
1912-13—19 "	1915-16—60 "
	1916-17—71 "

This shows an average annual increase of approximately 38% while the average annual increase in the entire high school enrollment has been but 3.8%. These figures show a wholesome growth of interest in the course since the work is entirely elective on the part of students. The enrollment of 71 during the past year is a good showing in comparison with other special departments when it is considered that the interests of pupils are so largely urban in such a school as Janesville. With the attraction of a larger number of the eligible rural pupils, elsewhere recommended in this report, there ought to be a continued growth in this course for at least a number of years.

Occupation Represented in Enrollment

It was interesting to find that a very large per cent of pupils in this course come from homes where farming or some phase of agricultural work such as truck gardening, is the occupation. The total number of separate pupils who have been in the course at any time is 168. Out of these 73 or 43.5% came from farm homes. Out of the 73, 56 were tuition pupils. The following table shows the classes of occupations represented:

From farm homes.....	73
From professional occupations (doctor, clergyman, etc.)..	3
From commercial occupations.....	18
From trades (machinist, painter, tailor).....	19
From laboring class	20
Undetermined	35
Tuition pupils	56

These figures indicate rather strikingly that this course is contributing strongly to the needs of the pupils from rural homes. It is also attracting a good many pupils from the homes of laboring, trade and commercial classes who live in the city.

As previously suggested, such training for city pupils whose interests lie in this direction is exceedingly desirable and the showing here given speaks well for the results of the course, so far as this point is concerned.

What Pupils Do After Leaving the Course

Out of the 168 separate pupils who have entered the course, 71 were still in the course at the end of the last school year. This leaves 97 who have left the course. Of these 16 were still in school though taking no agricultural work. Six have gone to higher institutions for study in lines other than agriculture. Of the remaining 75 who have gone out into industry, 35 or 47% have taken up some line of agricultural work. Nearly all of these have gone directly to the farm, though two of them have gone to take up advanced study at the agricultural colleges and will later take up some phase of farm work. This is regarded as a very good showing as to the vocational value of the course. The training given is actually being utilized immediately and effectively by a large number of the pupils taking the work.

A good many concrete examples were found to show that the work has actually aroused new interest and resulted in more efficient methods of farming. One boy since finishing the course has been given the management of his father's two hundred acre farm, and conspicuous improvement has resulted. In another case, the father purchased a farm through the interest of the boy and the latter has now gone to the agricultural college to get a better training for the management of the new project. Another boy has gone to manage his uncle's farm; one has taken up official cow testing work, while many others are now working on the home farm.

Length of Time Devoted to Course

Four units or years of agricultural work are offered in the course. It was found that only a small number of those entering completed the full four years' work. A very large number

took one year or less. Of the 97 pupils who have left the course, 8 took 4 years' work; 7 took 3 years' work; 7 took 2 years' work and 75 took 1 year's work or less. This would make the average taken by these pupils less than $1\frac{1}{2}$ years. A somewhat better showing is made among the pupils still in the course. The present freshman class has had a chance to take only one year. In the sophomore class with 22 members, 10 have taken 2 years; 1 has taken $1\frac{1}{2}$ years, and 10 have taken but one year. In the present junior class of 15, 1 has taken 4 years; 5 have taken 3 years; 4 have taken 2 years; 3 have taken $1\frac{1}{2}$ years and 2 have taken 1 year. In the present senior class of 6 members, none have taken more than 1 year.

It is by no means to be expected that all students entering this course must necessarily complete the full four years of work. It is desirable that the course should be open to those who wish to try out the work and test their interest and adaptability in this line. The course should be flexible enough to allow such pupils to take a year or even two years and then shift to other courses if this seems wise after due conference with supervisors. However, the figures here given indicate rather too great a tendency to dabble in the course. It would be desirable in the judgment of the survey that a much larger per cent of pupils should complete the course or at least continue the work over a longer period. The question is raised whether pupils have not been left too much to their own whims and to passing notions as to what work they would like to elect. It is strongly urged that decided effort be made to see that pupils are given adequate advice. They should not be allowed to drop out of the course until this seems wise for the pupil in the judgment of superintendent or principal after careful investigation. It is believed that the efficiency of the course might be much strengthened by holding pupils, as a rule at any rate, for a longer time in the course.

Equipment

The equipment found indicates that the school authorities have been fairly liberal in providing for the material needs of the work. However, it is thought that the equipment for agriculture is somewhat scant in comparison with that provided in other special courses, such as manual training, commercial

work and domestic science. While the farm itself furnishes a large part of what is needed in the way of laboratory work, nevertheless, a good deal of equipment is needed for suitable demonstration and experiment work in direct connection with the school.

The room now provided for this work is adapted to many of the needs, but it would be a great advantage to have another room which could be used for storing corn and other materials and for carrying on such practical farm operations as milk separation, incubator work etc. This need should be especially kept in mind in connection with any new building plans.

Again, while a school farm is not a necessity and perhaps not even desirable, there is great need of a small plot of ground which can be used for demonstration and experimental purposes.

It would be a distinct advantage if a plot of at least two acres could be supplied as near as possible to the school. Work in connection with this plot would not at all take the place of the home project work which is a fundamental necessity. However, much instruction work needs to be done in relation to actual practice which can be provided for on a school plot. Of the 90 agricultural departments in Wisconsin high schools, nearly half operated small plots in 1915-16 and this work was considered of great value in every case. Green Bay, the city nearest the size of Janesville, operating a high school agricultural department, has had school plots in both high schools for a number of years. On the west side the plot has grown from two acres to twenty-two acres as the work has developed.

Methods of Work

The methods of work found in operation in this course were regarded on the whole as very effective. Much practical work is being done. Home projects were receiving main attention, although incubator work, seed testing, etc. have been extensively carried on as group projects at school. In the freshmen class 8 boys were carrying on incubator work; 4 garden work; 8 keeping milk records; 1 raising a calf; 2 building and setting up bird houses, and 1 was caring for an orchard.

In the sophomore class, 3 pupils were doing orchard pruning; 1 raising baby beef; 4 testing seed corn at home; 2 doing incubator work; 4 raising gardens; 3 caring for chickens; 1 raising

ducks; 1 keeping a poultry record, and 2 managed hotbeds. Two had dropped from school and 3 had not organized any project work.

In the junior class, 1 was doing landscape work on home grounds; 3 were managing hotbeds; 1 incubator work; 3 testing cows; 1 care of chickens; 3 no project. All of the 6 in the senior class were doing landscape work on home grounds.

Successful completion of these projects requires summer supervision. The plan now in operation of employing the agricultural teacher during practically the whole year in order to provide this necessary supervision is highly commended. The teacher should visit each student of the department at least five times during the vacation and proper instruction should be given in relation to each project. This project work is not something that should be left to the choice or whim of the pupil. It should be considered the most essential part of this course, and students who do no such work should not expect credit in the work. A careful system of reports should be kept in connection with the projects. Reports should include those by the agricultural teacher to the school board and by the pupils to the instructor.

Classroom instruction in this course is generally commended. Pupils showed good interest and a business-like attitude. The only suggestion in this connection is that the work might be somewhat strengthened by a fuller discussion and rounding up of fundamental scientific principles in connection with classroom presentation. This does not mean a technical, severely scientific treatment of topics, but it does mean as full an organization of material as is possible within the capacity of pupils and the establishing of scientific relationships and wide applications of scientific knowledge gained by the pupils in other science studies, to the agricultural problems in hand.

Exhibits, Contests and General Activities

Exhibit and contest work has been given considerable attention for a number of years. A district stock judging contest has been held annually for two years in connection with the State Stock Judging Contest. In 1916-17 Janesville secured third place in the district contest. An exhibit of the high school agricultural department was held at the Rock County Fair in

1916, and many prizes were taken by the boys. At the same event a stock judging contest was held at which most of the prizes were secured by boys in this course. A school exhibit was held in May of this year at which incubator work, rope tying and corn testing demonstrations were prominent features. The domestic science department participated in this exhibit. These activities are of great value in arousing interest and in rounding up results of practical work in such a way as to lead both pupils and community to see that the course is worth while. A fall exhibit is especially important as a means of showing the results of the students' project work. This exhibit ought to be made a prominent feature for the whole school and community.

It has already been shown that the results of the course have been most helpful to the whole farming community about Janesville. This has come, first of all, through the work with the pupils and through them to their homes. There have also been carried on a number of helpful activities which have reached the rural community directly. During the last year or two about twenty farmers, largely fathers of boys in the course, have been advising quite regularly about their farm problems with the agricultural director. An agricultural column has been maintained for five years in the Janesville Gazette under the direction of the department. In 1915-16, 3000 ears of corn, and in 1916-17 400 ears, were tested by pupils for local farmers. This was done at school as a part of the regular work. Another activity which aroused unusual interest in 1917 was a debate between four teams in Rock county on the subject, "Resolved that the Holstein Cow is the Most Profitable for the Rock County Farmer." All these activities are most valuable and should be encouraged as far as possible.

A phase of work which is exceedingly valuable in connection with an agricultural department does not seem to have received much systematic attention at Janesville. This is a type of manual training especially adapted to the needs of the farm. The regular manual training course demands too much time and usually deals with much general work which is not of special value to the farm boy. It is therefore very desirable that special classes be organized for agricultural pupils and that the work should be planned with special reference to farm needs, dealing with such problems as rough carpentry, forge work,

farm building construction etc. Two double periods a week would furnish enough time for a good line of work of this kind and agricultural pupils could easily carry this in addition to the regular four study program. If the full time of a regular study is given, the work should in any case be of a distinctly agricultural type closely related to direct farm needs.

The report may be summarized in the following points and recommendations:

1. The practical character and general efficiency of the work of this course are highly commended.
2. The course has had an encouraging growth since its organization and the work has contributed much to the rural problems and through this help has benefited the city as well.
3. The great majority of pupils in the course have come from the farm and almost 50% of the boys on leaving the course take up farming pursuits. This number includes many city boys.

The following recommendations are submitted:

1. That special effort be made to hold pupils in the course for a longer time and that they be allowed to give up the work only after very careful advice and conference with superintendent or principal.
2. That in connection with new building plans larger accommodations be provided for this course including a second room which should be adapted to much of the practical work.
3. That as liberal provision as possible be made for additional equipment during the next year or two.
4. That special classes in farm manual training be organized for the agricultural pupils and the work be made distinctly agricultural in type.
5. That a school plot of at least two acres be secured if possible to be operated in connection with this course for demonstration, practical experiment and for securing adequate illustrative material.
6. That the employment of the agricultural teacher for at least an eleven months' year be continued as a permanent policy and that a systematic plan of reports be developed in connection with the project work especially during the summer vacation.

SECTION IV

SCHOOL GARDENING

Considerable work in gardening has been a regular part of the agricultural projects. A more special effort has been made in this line during the last two years in connection with the city grades. In view of the present war emergency, the work has been given more attention during the present year. The agricultural director who is now employed for an eleven and one-half month's year has for part of his work the supervision of the gardening. Special supervision is provided during the vacation months.

The following plan, worked out by the director in cooperation with the mayor and some of the business firms of the city, is now in operation. By running a notice in the local paper and by doing some direct solicitation, 100 vacant lots were secured. Each lot is approximately 120 feet by 50 feet and contains about one-seventh of an acre. These lots have been apportioned to grade pupils who could not get land at home. Altogether, 184 pupils have started gardens. As a means of holding enthusiasm and emphasizing the motive in the work, a garden picnic and celebration have been planned for the fall when results will be rounded up. No special prizes have been offered by the school, but some of the pupils are working for prizes which have been offered by the Janesville Machine Company, the Rock River Cotton Company, and the Parker Pen Company.

The suggestion is here offered that this phase of the work might be given more emphasis. A special school exhibit as a means of rounding up garden results is regarded as very valuable. In connection with this, clubs and contests should be organized. Although in the present crisis every effort ought to be made to arouse patriotism as the highest motive in this work, nevertheless such a motive may well be reinforced by the motive which always appeals strongly to children,—that of excelling in competition with others of their own group. The keeping of a careful account of all financial operations in connection with the work should receive special attention.

No doubt many other grade children besides the 184 who are

working under the supervision of the agricultural director are carrying on some garden work. Some data were gathered from the different ward schools to determine definitely just how much of such work was being done. However, the limits of time and space have prevented the organization of this data or the drawing of any definite conclusions. While 184 pupils is a good many in the aggregate, and makes a very favorable showing, nevertheless, with 640 pupils in the grades from 5 to 8 inclusive, it would seem that this work might easily be very much extended if adequate supervision could be provided. It is doubtful if any phase of manual or industrial training has more value than this garden work. It would be very valuable, at least as group or class work, in grades below the fifth. Of course, it would be impossible for the agricultural director to handle all this work if it became general among all the pupils even of the upper grades.

This leads to the suggestion that a distinct forward movement would be made possible in Janesville by employing a special teacher especially qualified to supervise such work. This teacher would be able also to organize nature work in all the grades, a kind of work sadly neglected in view of its fundamental educational value. A number of American cities are meeting with remarkable results from the operation of such a plan. The city of Cleveland, where a special supervisor of garden work has been employed for a number of years, has come to have a very wide reputation for its wonderful gardens, which include both practical flower and vegetable gardens and also landscape decoration of school and home grounds. The cities of Madison, Superior, and Milwaukee have been carrying on a systematic plan of garden work for a number of years with excellent results.

This leads the way to a little fuller discussion of the question of good landscape planting about school and home grounds. Very little of this work has been done about the grounds of the various schools of Janesville. Pupils in the agricultural course of the high school have done a little on some of the homes of the city. However, the whole city offers a great opportunity for more work of this kind. It would be very easy to popularize this work throughout the whole city so that Janesville might become known for its attractive yards, not only those of the well-to-do class, but also those among the people of every class.

The town of Harvard, Illinois, is an excellent example of how such an ideal may find expression everywhere in the community through systematic effort under good leadership. Why should not the school above any other civic agency furnish such leadership? The city of Wausau, Wisconsin, is a fine example of how such work can be developed as a form of civic biology.

The school grounds should receive special attention. School children are entitled to as beautiful surroundings as are the insane or the county's dependents. Yet few school yards compare in attractiveness with the grounds of asylums and hospitals. There is need of definite landscape plans for each school yard, worked out by those who have had training in this art. When carefully made plans have been secured, a number of years may then be taken for realizing the complete plan, but when it is finished it becomes a source of beauty and enjoyment for all future years, not only for the school but for the whole community. This influence of attractive school grounds upon the spirit of the whole community is appreciated altogether too little.

It is recommended that greater attention be given to the idea of decorative planting in connection with both the school grounds and the homes of the city. The school garden movement should also be more fully developed. This is a particularly opportune time for adequate provision for this work, since the great world food crisis has roused everyone as never before to the great need.

XI LIBRARY WORK

Two aims are given prominent attention when the purposes of education are discussed. One of these is the development of good reading tastes which shall function throughout life; the other, training in the ability to find information when it is needed. These two aims constitute the basis of this survey of the library work in the Janesville schools.

METHOD OF SURVEY

A visit was made to the high school, to some of the grade buildings, and to the public library, to get a general idea of the situation. A questionnaire was then sent to the superintendent, asking for specific data as to books, library equipment, etc., in the grades and high school. Later, a test in general reading and a test in ability to use references was given to the freshman class in the high school, and to all the eighth grades, with the exception of the Washington School, which, for lack of time, could not be reached on the day the tests were given.

GENERAL READING

By general reading is here meant the reading of books not connected with class work, but which is done for its own sake and largely on the voluntary basis. Such reading in school has the twofold purpose of developing a taste for good reading and training in the wise selection of reading matter. That which we want to have done voluntarily throughout life we must plan to have done without compulsion in school, otherwise it will be dropped like any other task work when the compulsion of school requirements ceases. The purpose of this survey of general reading, then, is to determine to what extent good voluntary reading is being done and what reading tastes are being developed.

That much good reading is being done in the Janesville public schools is evident from the fact that over half of the grade pupils and 300 of the 530 high school students are reading under the auspices of the Wisconsin Young People's Reading Circle.

Grade pupils who are not reading under such auspices are required to report on other reading done from lists provided.

The circumstance that over ninety per cent of the pupils in the three upper grades and four out of every five high school students hold borrowers' cards from the public library is also significant in the direction of good voluntary reading.

To throw some light on the development of reading tastes and training in selection of reading, a test on general reading was given to the eighth grades and to the high school freshmen class.

Number of Books Read

As will be seen by referring to the questions of the test, page 215, the first question relates to the number of books drawn by the pupils from the public library. In these figures were included books drawn from classroom libraries. They include the outside reading done from the beginning of school in September until the time the tests were given in April.

Since neither the grades nor the high school have libraries of their own for general reading and since reading of worth while books from other sources on the part of pupils is usually a negligible factor, the figures with regard to books borrowed from the public library (including classroom libraries) are made the basis for the following remarks on the amount of reading done.

The answers to question 1, give the following results:

Average number of books borrowed and read by grade children, 17: Adams school, 16; Garfield, 18; Jefferson, 15; Lincoln, 25. Average for High School freshmen, 12.

	Eighth Grades	Freshmen
Drew no books.....	9.....	18
" from 1 to 5.....	18.....	22
" " 6 to 10.....	20.....	22
" " 11 to 15.....	8.....	18
" " 16 to 20.....	8.....	7
" " 21 to 30.....	19.....	21
" " 31 to 50.....	6.....	3
" over 50.....	5.....	1

In the eighth grades, one drew 55 books; two 60; one 85; and one 90.

It will be noted in the above tabulation that 9 (9.6%) of the eighth graders and 18 (15.8%) of the freshmen drew no books; also that 18 (19.2%) of the eighth graders and 22 (19%) of the

freshmen drew only from 1 to 5 books. These pupils presumably did but little worth while general reading during the school year.

While compulsion in general reading is scrupulously to be avoided whenever possible, yet it would seem that these non-readers ought to be reached in some way that will give them the stimulus and training that good reading fosters. The lowest satisfactory limit set in marking the papers was eight books.

It is difficult to draw the line between a reasonable and an excessive amount of general reading. More than one book a week, however, is, in most instances, excessive. This limit is exceeded by eight pupils in the eighth grades and by only three freshmen in the high school. Hence it is not a serious problem, at least so far as the reading of books drawn from the public library is concerned. More discussion among pupils and with the teacher about the books read will have a tendency to reduce excessive reading by giving the reader a motive for paying more attention to the content of his reading and taking time for some independent thinking about what he reads. It will probably also be found that excessive reading is largely fiction. By widening the reading interests, the tendency to haste and superficiality will be lessened.

Effect of Distance from the Library

Does distance from the public library make any considerable difference in the amount of reading done?

Pupils were asked to indicate on their test papers the number of blocks from their homes to the public library. In the following tabulation, the pupils in each school were divided into

TABLE 36

School	GROUP FARTHER FROM LIBRARY			GROUP NEARER TO LIBRARY		
	Number of pupils	Average distance from library (blocks)	Number of books (average)	Number of pupils	Average distance from library	Number of books (average)
Adams	15	15.3	11	13	8	22
Garfield	7	12.7	12	8	7	10
Jefferson	12	10.5	18	14	3.4	12
Lincoln	12	15.2	24	12	7.6	28
High School.....	56	19	10	56	6.2	15

two equal or nearly equal groups, in one of which were placed those farther from the public library and in the other those nearer to the library.

It will be seen that in the Adams and Lincoln schools and in the high school, the groups nearest to the library drew decidedly the largest number of books; in the Adams school, 100% more; in the Lincoln school, 16%; and in the high school, 50%. In the Jefferson and Garfield schools, the groups nearest the library drew the fewest books. This is perhaps explainable on the theory that those nearest the library in these schools are so near the library that they do more reading in the library and so draw fewer books. It will be noted that these two schools are nearest to the public library.

Possibly, too, the home influences which bring about a satisfactory amount of general reading are not, on the whole, so effective in the parts of the city nearest to the library as in those parts with which comparison is made.

We may, then, conclude that increasing distance from the library rapidly decreases the amount of reading of library books. Since most homes depend on the public library for their general reading, this means that as the distance from the public library increases, the amount of general reading decreases, even when there is close cooperation between schools and library, as is the case in Janesville.

Classroom Libraries

In view of this fact, classroom libraries sent to the different schools by the library are of great importance. They help to equalize conditions with respect to general reading and to give to all the pupils equal opportunities in the development of good reading habits and tastes.

The following tabulation of figures relating to classroom libraries provided by the public library for the grades and for use in the high school during the school year 1916-17 was provided by the librarian of the public library.

The following grade schools received books from the library:

School	Grade	Sent in Fall	Sent in Spring	Total
Washington	2nd	0	0	
"	3rd	29	29	
"	4th	31	31	
"	5th	30	30	
"	7th	32	32	
"	8th	31	31	
				306
Adams	1st	0	30	
"	2nd	0	8	
"	3rd	30	30	
"	4th	29	29	
"	5th	0	0	
"	6th	0	0	
"	7th	0	0	
"	8th	0	0	
				156
Jefferson	2nd	0	15	
"	3rd	0	0	
"	4th	0	0	
"	5th	0	0	
"	6th	0	0	
"	7th	0	0	
"	8th	0	0	
				15
Douglas	2nd	0	11	
"	3rd	29	29	
"	4th	31	31	
				131
Grant	1st & 2nd	0	15	
"	3rd & 4th	27	27	
"	5th & 6th	29	29	
"	6th	29	29	
				185
Jackson	1st & 2nd	14	14	
"	3rd & 4th	25	25	
				78
Lincoln	3rd	0	0	
"	4th	0	0	
"	7th	0	0	
"	8th	0	0	
				0
Garfield	5th	29	29	
"	6th	30	30	
"	7th	32	32	
"	8th	31	31	
				244
Webster	2nd	0	0	
"	5th	27	27	
				54
Final total.....				1169

In all the grades above the second grade the books were returned to the library and a new set issued in February.

Forty-two classroom libraries were sent out, including 1169 books.

These school libraries were retained an average of about three months.

High School

To the high school, there were sent from the public library a total of 209 books. These were sent to individual teachers at their request. Teachers of the following subjects received these books, the number to each teacher ranging from 3 to 84 books: History (117), English (32), Science (11), Mathematics (9), Manual Training (7), Physical Training (7), Latin (5), Domestic Science (4), Agriculture (3), Miscellaneous (14).

Distribution of the Classroom Libraries

The marked unevenness of distribution of the classroom libraries which a cursory inspection of the above tabulation discloses is due in part to the policy of sending more such libraries to the schools farthest from the public library. It is expected that the pupils in the schools nearer the library will more often visit the public library and so not have as much need for classroom libraries.

However, there are apparently a number of inconsistencies in the carrying out of this policy. The Lincoln and Garfield schools are approximately the same distance from the library, yet the former had no classroom libraries for its 124 pupils, while the latter had 8 classroom libraries supplying 244 books for its 100 pupils. The Adams school had no classroom libraries for its four upper grades, although it is farther from the library than the Garfield school which had 244 volumes for the same grades.

Further discussion of classroom libraries is given on page 217 in connection with the comments on the standings in general reading.

Test in General Reading

Following is the test given in general reading, to which reference has already been made.

1. How many books have you drawn from the public library and read this school year?

2. Title of the work of fiction read within the last two years that you liked best.
3. Other books—not fiction—read within the last two years that you liked best.
4. Title of work of fiction which you have not yet read, but which you are anxious to read soon.
5. Other book—not fiction—which you have not yet read, but which you are anxious to read soon.
6. What two magazines do you like best to read?

THE STANDINGS IN GENERAL READING

It is of course a difficult matter to grade papers in general reading so as to express by percentages the condition with respect to the development of reading tastes and habits. The standings tabulated below should be looked upon only as approximations, with liberal allowance for the fact that the test was given without previous warning and that it is a kind of test with which the pupils are very likely unfamiliar. The questions were rated as of equal value.

With the above in mind, it will be seen that the standings should be given a higher estimate than the figures given usually receive. We may consider 90 or over as *excellent*; 80 to 89, *very good*; 70 to 79, *good*; 60 to 69, *fair*; 50 to 59, *poor*; below 50, *very poor*.

TABLE 37.—Result of Test in General Reading

Standings on a Scale of 100

	SCHOOLS				No. of Standings	High School
	Adams	Garfield	Jefferson	Lincoln		
90-100		4		1	5	1
80- 89	3	6	9	5	23	15
70- 79	5	4	7	7	23	18
60- 69	4		5	3	12	22
50- 59	6	1	3	3	13	21
40- 49	5		2	2	9	17
30- 39	3		1		4	9
20- 29	1			2	3	8
10- 19	1				1	3
0- 9				1	1	
Average	56.6	81.8	68.6	62.4	65.7	57.
Median	56.7	84.2	73.6	71.4	71.7	59.5

Comments on Standings in General Reading

The standings in general reading, with the exception of those in the Garfield school, are considerably lower than might reasonably be expected, in view of the good showing as to the amount of reading and the circumstances under which it is done. The following suggestions are made with a view to accounting for and improving this condition.

A clear idea of what books read, please and help us most and why, is an essential element in good reading tastes and habits. Informal discussion by the pupils in groups, with the teacher as leader, and informal conversations between the teacher and individual pupils based on books read are among the best means of developing this clarity with respect to reading done.

The answers to questions 4 and 5, relating to books which the pupil has not yet read, but which he is anxious to read soon, show that many have no "waiting list" of worth while books, and so, when left to themselves, are too likely to take up with "trashy" reading which happens to attract their attention. Developing the habit of having such a waiting list is an effective means of promoting good choice of books throughout life. Here again the discussions mentioned in the preceding paragraph are to be recommended.

The average standings are considerably lowered by the standings of those who drew the fewest books from the public library. The group of 47 pupils in the eighth grades who borrowed from 0 to 11 books each have an average standing of 61.2% ; the group of 46 pupils who borrowed 12 or more books each have an average standing of 71.4%. In the high school freshmen class, the group of 63 who borrowed from 0 to 10 books each received an average standing of 48.8% ; the group of 51 who borrowed more than 10 books each averaged 67%.

It may be objected that the number of books drawn was in and of itself a factor in determining standings. Since, however, this was only one of six questions, it does not affect the standings enough to make any difference in the conclusion that the group who drew the fewest books have achieved the poorest results in the development of good reading tastes and habits.

The figures given on page 211 show that twenty-nine per cent of the eighth graders and thirty-five per cent of the high school freshmen drew either no books or not to exceed five books. This

fact, in connection with the above considerations, leads to the suggestion that special efforts should be made to get all pupils to do at least a reasonable minimum of reading.

The average standing of the eighth graders in the Garfield school, it will be noted, is very much higher than that of any of the other grade schools in which the test was given. This is the only one of these schools which is shown by the tabulation on page 214 to have received classroom libraries for the upper grades. This may possibly be only a coincidence. It is likely, however, that the use of classroom libraries in the Garfield school is also to a considerable extent a cause of the difference of standings in favor of that school.

Classroom libraries give teachers frequent opportunity to promote worth while reading. When interest has been awakened by reading from the books, by book reports, or otherwise, the books are at hand to be loaned while the desire to read them is at its height. Classroom libraries also give opportunity for frequent "browsing" among good books, and this is conceded to be one of the best means of developing good reading tastes. The limited number of books in such libraries, compared with the large collection in the public library, gives prominence to the very books among which the pupil should select his reading, thus greatly increasing the likelihood of wise selection.

It is, therefore, recommended that classroom libraries be provided for every grade in all the grade buildings, irrespective of the distance of the building from the library. Pupils should, however, be encouraged and expected to make frequent visits to the public library, in order that they may make use of its larger collections and get into the habit of drawing upon its resources.

Standings of the High School Freshmen

The lower standing of the high school freshmen as compared with the eighth grades in all except one school is a puzzling feature.

It was thought that possibly the nonresident freshmen, who, coming mostly from rural communities, presumably had had fewer library advantages, might, in part, account for the result. That such is not the case, however, is revealed by a comparison of the average standing of the nonresident freshmen with the average standing of both residents and nonresidents who took the test. The average standing of the nonresident freshmen is

56.7%, and that of all freshmen, 56.98%, a difference of less than one-third of one per cent.

The average standing of the eighth graders in the Garfield school was 81.8 as compared with 56.98 in the case of the high school freshmen. Perhaps some contrasting conditions between the two may give a clue.

During the school year 1916-'17, there were sent from the public library to the Garfield school two classroom libraries to each grade. The total number of books thus sent was 244 for the 100 pupils enrolled. These books were for the general reading of the pupils, largely in connection with the Young People's Reading Circle. There were sent from the public library to thirteen of the high-school teachers for use of students in their classes and for their own use as teachers 209 volumes. This is all the books sent to the high school for its 530 students. Most of these books were presumably for collateral reading or reference in connection with the subjects taught. Since, too, the high school library supplies but little in the way of general reading, we may conclude that the pupils of the Garfield school were much better provided with good general reading, in a way which made a direct appeal, than were the high school freshmen. It is altogether likely that this accounts to a considerable extent for the better showing by the Garfield school as compared with the freshmen in the high school.

The establishment of a good sized well-organized high school library containing, in addition to reference material and books for collateral reading, a well-selected lot of books for general reading, will decidedly improve the condition as to general reading by high school students. The books for general reading may well be provided by the public library, somewhat as classroom libraries are supplied to the grades.

As has already been stated, page 211, 15.8% of the high school freshmen drew no books from the public library and 19% from one to five books each. This is a total of 35% who fell below a reasonable minimum of reading. This fact, doubtless, contributed largely to the low average standing of the freshmen. One of the remedies is suggested above, namely, bringing the books to the students through the high school library. This, together with some general requirements as to outside reading which will reach all high school students, is a conclusion clearly indicated by the facts of the case.

Magazine Reading

Magazines offer as wide a variety of general reading as books and they are read by many people who seldom read books. It is of importance, therefore, that schools should acquaint their pupils with the best magazines and develop a taste for reading them. Only a beginning can be made in the upper grades and the first year of the high school, but upon that beginning, the future reading of many pupils will depend.

The following tabulation was made of the answers to question 10 in the test on general reading; namely, What two magazines do you like best to read?

Most Popular Magazines. Eighth Grades and Freshmen

Magazine	Eighth Graders	Fresh- men	Magazine	Eighth Graders	Fresh- men
Adventure	1		Movie Stars	1	
America	1		Moving Picture	1	
American	3	4	National Geographic	4	5
American Boy	26	22	Needlecraft	2	
American Continent		1	Outing		1
Boy's Life	3	1	People's Home Journal	2	3
Boy's Magazine	1		People's Magazine	1	
Campaign Survey	1		Photoplay		1
Classmates		1	Pictorial Review	8	4
Colliers		3	Popular Magazine	1	2
Comfort	1		Popular Mechanics	19	33
Cosmopolitan	2	4	Popular Science	1	7
Country Gentleman	1		Red Book		1
Delineator	2	2	Review of Reviews		3
Designer		1	St. Nicholas	21	16
Detective	2	1	Santa Claus	1	
Electric Experimenter		1	Saturday Evening Post	2	6
Everybody's	2		Science Magazine		1
Gentlewoman	2		Scientific American		1
Geographic Survey		1	Something-to-do	1	
Good Housekeeping		1	Successful Farming		2
Harper's Bazar	1		Sunday Sch'l Advocate	1	
Hearst's		2	Technical World	1	2
Health	1		To-day's Magazine	1	
Hearth		1	Vogue		2
Hearthstone	1		Woman's Home Com- panion	5	1
Home	2		Woman's World	1	1
Illustrated World	1	2	World's Magazine		
Ladies' Home Journal	10	14	World's Outlook	1	
Leslie's	2	3	World's Work		6
Life		1	Young Churchman	1	
McCall's	9	12	Young People's Maga- zine	1	
Mechanics Magazine	1		Youth's Companion	22	21
Merchants' Magazine	1				
Metropolitan		2	No magazines read	3	2
Modern Priscilla	1		Only 1 magazine read	7	6
Monthly Magazine	1				
Mother's Magazine	3				

A few of the above titles cannot be found in magazine lists; it is likely that most of these are incorrectly given titles of magazines read.

The first five magazines in favor, with the number of votes for each, are as follows:

Eighth Grades		High School Freshmen	
1. American Boy.....	26	1. Popular Mechanics.....	38
2. Youth's Companion.....	22	2. American Boy	22
3. St. Nicholas.....	21	3. Youth's Companion.....	21
4. Popular Mechanics.....	19	4. St. Nicholas.....	16
5. Ladies' Home Journal.....	10	5. Ladies' Home Journal.....	14

Considering the age and stage of the readers, these favorites, with the exception of the fifth on the list some will say, testify to good choices in magazine reading. However, there are too many scattering votes for periodicals which have little or no merit to recommend them. On the other hand, some of the scattered choices are very good, as witness: *Colliers*, *Good House-keeping*, *National Geographic Magazine* (9 votes), *Review of Reviews*, *Scientific American*, *World's Work*. One misses in these scattering choices the *Independent*, *Literary Digest*, and *Outlook*.

It is recommended that some system be adopted by which the leading magazines will come regularly to the high school and a carefully selected minimum to each of the grade buildings housing the grammar grades, and that the necessary equipment for facilitating and encouraging magazine reading be installed. The public library might well be made the center for magazine distribution to the various schools.

ABILITY TO FIND INFORMATION; REFERENCE

Education is sometimes defined as the ability to find information when you need it. While this is only a partial definition, yet it expresses the fundamental importance of this function of education. If pupils are trained to use reference sources effectively, they will increasingly demand less of the teacher's time, will not need to be loaded down with information which they can find when they need it, and will leave school with a training that they can put into practice throughout life.

Equipment in the Grades

In order that reference work may be properly carried on, it is necessary that there be certain easily accessible reference material in the different grade buildings and in the high school.

To secure data as to reference equipment in the grades, the

following questionnaire was filled out by the Superintendent at the request of the department.

Grade Libraries

1. In how many of the grade buildings housing grades above the fifth is there a copy (in at least fair condition) of :
 - a. Webster's *New International Dictionary*? No New Webster's *International Dictionaries*; several old ones.
 - b. An up-to-date yearbook, such as the *World Almanac*? None.
 - c. An up-to-date (within five years of present date) encyclopedia of six or more volumes? None.
 - d. Champlin's *Cyclopedia of Common Things*? None.
 - e. Champlin's *Cyclopedia of Persons and Places*? None.
 - f. Champlin's *Cyclopedia of Literature and Art*? None.
 - g. Champlin's *Cyclopedia of Natural History*? None.
 - h. The latest *Wisconsin Blue Book* (1915)? None.
 - i. An up-to-date atlas (within five years of present date)? None.
 - j. Robert's *Rules of Order*? None.
2. How many grade buildings housing grades above the fifth grade? Six.
3. In how many grade rooms of the 5th, 6th, 7th, and 8th grades are there a number of smaller dictionaries for reference? $\frac{1}{4}$ of total.
Which dictionaries are used for this purpose? Webster's Collegiate.
4. In which grades does each pupil have a copy of a smaller dictionary at his seat? Nearly all from 4th up.
5. To how many of the seventh and eighth grade rooms does at least one daily newspaper come regularly? None.
6. How many of such grade buildings have:
 - a. A filing system for pamphlets and clippings, including pamphlet boxes? None.
 - b. A reading table for each of the three upper grades, with chairs around it, for use in reference work, etc.? None.
 - c. A bookcase in each grade room? All.
 - d. A conveniently located dictionary holder (a stand fastened to the wall or a definite place on a reading table or a holder on its own stand) in each of the three upper grade rooms? Only a few rooms so equipped.

8. In how many of the grade buildings are definite lessons given in reference work, including a course in the use of the dictionary, lessons on the use of the encyclopedia, year-book, an atlas, care of books, printed parts of a book, Wisconsin Blue Book, quotations, magazines, the daily newspaper? Only incidental teaching along this line.
9. How many of the eighth grade classes are given definite instruction in the use of the public library, including a practice lesson in the library building? All.
If such instruction is given, how many lessons does each class receive? One per year, eighth grade only.

It will be seen by a perusal of the above questions and answers that the most obvious reference material and equipment are to a large extent lacking in the grade buildings.

There is no copy of an up-to-date unabridged dictionary, such as Webster's New International Dictionary, which was issued in 1909. The previous edition, mentioned as being in some of the buildings, was issued in 1900 and hence is very much out-of-date; but even that is not at hand in all the schools.

There are no reading tables on which reference books may be spread out and around which pupils may be seated in proximity to shelves holding the reference books; and, which is perhaps more to the point, inviting and attracting the pupils to make use of reference material.

There is no up-to-date encyclopedia, none of the smaller one-volume encyclopedias by Champlin, no up-to-date yearbook, no up-to-date Blue Book, no up-to-date Atlas, no copy of Robert's Rules of Order. These with an up-to-date unabridged dictionary are a very modest minimum of reference material for the upper grades.

There is much material in the form of pamphlets and clippings valuable for reference which can be easily accumulated. There should be some system of pamphlet boxes and folders for filing such material where pupils and teachers can readily find it when it is needed.

One or more good representative daily newspapers coming regularly to each building would be valuable for reference in current affairs and would, besides, be of use in teaching how to read newspapers quickly and effectively.

Instruction in Reference Work in Grades

Learning what reference material to use and how to use it requires much systematic study as well as material with which to work. Every one will remember how slowly and with what effort he learned to get information from textbooks even though definite pages were usually assigned for study. Now, learning to use reference material is a more complex matter, and definite instruction in a systematic course of lessons is necessary to get satisfactory results. This is only beginning to be realized in our educational system. In fact schools have but recently had the library facilities to serve as laboratory material for this instruction. Tests in reference work held in a number of city and village schools the past school year have given uniformly poor results. And this is to be expected wherever definite lessons are not given in reference work. The State Department of Education has published a course of such lessons for the guidance of teachers, and can supply one to each teacher in the system.

Library Work

By the answer to question 8, it will be seen that only incidental instruction is given in the grades in finding information in reference sources.

The use of the public library is of the highest importance in reference work. Upper grade pupils will need five or more lessons on its use in order to become fairly well able to use its resources for reference. A start has been made in that each eighth grade is given one lesson by the public librarian. This should be increased to at least five lessons; and it would be well to give them in the sixth grade so that the public library may be used as a reference source throughout the upper grades. These lessons will supplement reference lessons given in the schools, but cannot even begin to be a substitute for the very many more lessons which should be given by the teachers.

Reference work in the High School; Equipment

The reference work in the high school requires much more in the way of books and other material than is the case with the grades. This comes from the more advanced studies pursued and the larger share that the student should take in the learning of assigned lessons and the study of topics upon which reports are

to be made. He should now learn how to work up a topic independently; and, in order to do this, he must know how to use reference sources.

A good-sized, well-selected reference library which each year receives new material, and from which out-of-date material is promptly removed, is a necessity in the modern high school. Its resources should be supplemented by those of the public library, but the latter cannot be a successful substitute for the former.

We understand that the establishment of an effective high school library has been decided upon for some time, but that the crowded condition of the high school has prevented the execution of the project.

It is therefore unnecessary to go into any great detail as to library conditions in the high school at the present time.

There are approximately 500 volumes in the high school library, scattered in fourteen different rooms, including the assembly room. Since a considerable proportion of these books are out-of-date, the usable part of the library is very small compared with the 1500 to 3000 volumes needed in a good high school library in a city of the size of Janesville.

The books in the assembly room, which presumably represent the core of the library, are arranged in no definite order, and give no indication by their character, numbers or condition, of the importance of reference work as a part of the functions of a high school. The lack of organization is illustrated by the fact that there is no accession book.

Teachers are privileged to draw books from the public library for use in connection with reference work or collateral reading in the subjects which they teach and apparently this privilege is made use of to a considerable extent. This, of course, greatly supplements the meager resources of the high school library. The city appropriates \$500 per year to the city library for school purposes. In addition some reference work is done at the public library, though the distance between school and library is so great that the loss of time necessitated in doing reference work at the public library acts as a deterrent.

The reference work is apparently largely that in which certain pages in certain books are given out. That, of course, must be done to an extent. But if there were a well-organized high school library, independent reference work on assigned topics

could more often be done and to the great advantage of all concerned.

The principal of the high school, in replying to the question as to how the need of a high school library has made itself felt, said:

"It is difficult, in the fall and winter, for young children to find time to go to the library excepting on Saturday. They cannot be sent from the study room or the classroom to look up a reference. It is impossible for them to become as familiar with card indexes, files, etc., as they might in the school library under the direction of a teacher librarian."

Instruction

There is no definite course of instruction in reference work in the high school. Some instruction is given on the reading of magazines. Indeed it would be difficult to give such instruction without a fairly well-organized high school library, at least beyond what should be given in the grades.

There ought to be some lessons given on the use of the public library to all in the freshman English class. This should be done by the public librarian, at least until there is a trained librarian in charge of the high school library. A minimum of five lessons should be given, and to those students who have had no previous lessons on the use of the public library, at least ten lessons should be given.

Test in Reference Work

In order to determine the condition with respect to training in finding information, the following test was given:

Note: Do not mention textbooks.

1. In what book would you look for a map showing what counties constitute the congressional district in which you live?
2. In what book would you find how many bushels of wheat were raised in the U. S. in 1915?
3. Where would you look to find out who the present governor of Colorado is?
4. If you were asked to go to the public library and get material for an account of the Life of General Joffre, and were not permitted to ask for the help of the librarian, what helps would you use? Name at least two.
5. Where could you most quickly look up the year of the birth and the year of the death of Patrick Henry?
6. Where would you ascertain whether or not it is good English to say, "If a young man is to succeed, he must always be on the square?"

7. If you were going to preside at a public meeting and wanted to have a book at hand as a guide in putting motions, etc., what book would probably best answer the purpose?
8. Where would you look for a short account of the Boxer rebellion? (Rebellion in China in the year 1900.)
9. If, in reading a news item of the European War, you saw mention of the Camonica valley, where could you quickly get information as to its location?
10. In what kind of a book could you learn who wrote?
 "Peace hath her victories
 No less renowned than war."

From what has been said above, it was to be expected that the standings in reference work would show but little ability in the finding of information. Little or no reference equipment and only incidental instruction, following no definite course account for the results of this test, of which the following is a tabulation:

TABLE 38.—*Test in Reference*
 Distribution of Standings (Scale of 100)

	Schools				Total for these grades	High school
	Adams	Garfield	Jefferson	Lincoln		
Over 70.....						
60—69.....						
50—59.....						1
40—49.....		2	1		3	7
30—39.....	2	2	2		6	14
20—29.....	5	2		3	10	36
10—19.....	13	6	13	16	48	39
0—9.....	8	3	11	5	27	17
Average.....	12.2	18.1	11.2	7.1	11.5	20.00
Median.....	14.6	15.5	10.94	14.4	14.6	20.3
Number of zeros.....	7	0	5	10	22	5

Note: At the left, in the above tabulation, is the range of standings, at the right of which is given the number of pupils of each eighth grade who received standings within that range and the total number for all these grades, also the number of high school freshmen within that range of standings. This is followed by the "average," "median," and the number who received zero on the test.

To those who inspect the above tabulation, we would repeat what is said above to the effect that poor results have been obtained in all public schools where the same test was given this school year, and that until there are definite courses in reference work, we cannot expect any better results. These figures put the condition before us in black and white and should bring about such a change in the curriculum as shall substitute for such lack of results at least as good standings as we expect in geography, history, and other traditional school subjects.

SUMMARY OF RECOMMENDATIONS WITH RESPECT TO LIBRARY WORK

GENERAL READING

1. Continue and extend the good work of the reading circles.
2. Provide classroom libraries for each grade in all the graded schools.
3. Provide a well-organized high school library with a trained librarian in charge. In this library, have a well-chosen collection of books for general reading.
4. Arrange for more informal conversations and discussions about books read, these to be participated in by the pupils in groups, the teacher acting as leader. (Reading classes make good groups for this purpose.)
5. Supplement present arrangements for outside reading so that all the students in the high school as well as in the grades above the third do at least as much outside reading as is prescribed in the Wisconsin Young People's Reading Circle lists.
6. Provide magazines in the grammar grades and High School; also one or more good daily newspapers.
7. Get pupils interested in good general reading connected with the subjects studied. For example, books of travel and adventure in connection with geography; biography and historical fiction in connection with history.

REFERENCE

1. For the grammar grades, provide at least the minimum of reference books and equipment mentioned in the questionnaire on page 222.
2. Provide a well-organized high school library especially strong in reference material.
3. Introduce a definite course in reference, both in the grades and in the freshman English class in the high school. In this course give the lessons in the publication of the State Department of Education entitled *Lessons on the Use of the School Library*, or their equivalents.
4. Give at least five lessons on the use of the public library to all sixth grades.
5. Give at least five lessons on the use of the public library to the freshman English class in the high school.
6. Much of the reference work should be done independently by the pupils after the necessary reference lessons have been given. Page references should be much less exclusively used.

XII TIME ALLOTMENTS AND COURSE OF STUDY

TIME ALLOTMENTS

The apportionment of the time available to each of the various subjects in the curriculum is a matter which all too frequently receives little serious consideration. The problem of proper time allotments is one which is not easily solved. A diversity of opinion prevails as to the most satisfactory apportionment. This has resulted in wide variations in the time given to each subject among cities. Several factors contribute to this wide variation. These include differences in opinion as to the relative worth of each subject offered, the subjects which should be taught, the extent of the subject matter to be included in a given subject, the standard of proficiency which should be attained in what is taught, the time required to reach such standards, and the age at which children should be introduced to a given subject, or the grades in which particular subjects should be stressed. Still another factor to be considered is the character and needs of the children in a particular school. Each of these factors doubtless has its influence in deciding the time to be allotted to each subject. In common practice, however, there are certain fundamental principles upon which school administrators are fairly well agreed. Nearly every one admits that reading especially in lower grades is one of the most important subjects of the curriculum. We know too that it requires less time to attain a satisfactory degree of proficiency in cooking or drawing than it does in reading or arithmetic. It is commonly considered advisable to devote a large proportion of the time in the primary grades to reading and only in the advanced grades should such subjects as manual training, domestic science, physiology and history be strongly emphasized. At present our only accepted guide as to the proper distribution of the time available is that of the average city. What is the average time given to arithmetic, to reading, and to the various other subjects in a large number of cities?

Schools which differ radically from the average, or the general tendency, may well be asked to account for such divergence. It is not infrequently found that schools within the same city differ widely. While uniformity may not always be desirable, the variation found is often more than differences in the needs of the different groups of children would warrant.

To discover the amount of time allotted to each subject in the elementary grades in Janesville, each teacher was asked to submit a copy of her daily program and to indicate carefully the number of minutes devoted to both study and recitation periods in each subject. It is quite noticeable that there are marked variations in the time allotted to various subjects in different buildings. Extreme variations within the same grade and for which little justification can be found, do exist. Reading, exclusive of phonics, varies in the first grade from 150 to 400 minutes per week, and in the second, from 150 to 300. Geography in the third grade, and spelling in the fourth, vary from 75 to 175 minutes. The degree of variation which occurs in the group of subjects which includes reading, phonics, memorization of poems, word study and language, may be seen in Table 39. This group may be designated as the "language" group, and in a city as homogeneous as Janesville, it might be expected that there would be little variation in the attention given these subjects.

TABLE 39.—Minimum, Maximum, and Average Time Allotted Per Week to Reading, Phonics, Memorization of Poems, Word Study, and Language in Grades I-IV

	Grade				Total of Grades I-IV
	I	II	III	IV	
Minimum	325	300	400	500	1,625
Maximum.....	730	630	600	600	2,635
Average.....	585	435	555	530	2,185
Average of 50 American cities	525	485	435	400	1,845

The table gives the minimum, maximum, and average time allotted per week to this group of subjects in the first four grades, for each grade, and for the four grades of a building combined.

Averages for 50 American cities are also included. It will be seen that in the first two grades more than twice as much time is assigned in some buildings as in others. This difference decreases in the third and fourth grades. A pupil who passes through these grades in the school giving the largest amount of time to these subjects, spends, on the whole, about 60% more time on them than does the pupil who attends the school giving the smallest amount of time to these subjects. Certainly no justification for such variation in Janesville can be found. A more reasonable basis of apportioning time to these subjects could be reached by taking either the average or the average for 50 American cities as a guide.

In Table 40 both the average and the median number of minutes allotted per week to each subject is shown. These numbers include both study and recitation periods. In computing these figures for any given subject only those schools were considered which reported time given to that subject. How practice in Janesville compares with the average of 50 American cities, may be seen by comparing Tables 40 and 41.

TABLE 40.—Average and Median Number of Minutes Per Week Allotted to Each Subject

	I		II		III		IV		V		VI		VII		VIII		Total of averages
	Av.	M	Av.	M	Av.	M	Av.	M	Av.	M	Av.	M	Av.	M	Av.	M	
Arithmetic.....	45	50	185	175	230	250	245	250	260	250	250	250	250	250	245	250	1710
Reading.....	345	400	220	200	245	250	240	250	250	250	245	250	215	240	220	225	1980
Phonics.....	65	65	50	50													115
Memorization of poems.....					65	65	75	100	60	50	40	40	60	60			300
Word study.....	100	75	90	50	70	75	65	75									325
Language.....	100	100	105	100	215	250	245	250	245	250	255	250	245	250	235	250	1645
Writing.....	80	75	80	75	80	75	90	100	90	100	80	75	65	70	70	70	635
Spelling.....	40	50	85	100	95	100	125	100	80	75	85	75	85	75	70	75	665
Geography.....					120	100	190	200	255	250	250	250	235	250			1050
History.....															250	250	250
Physiology.....															135	125	135
Drawing and construction.....	90	100	95	100	110	100	100	100	125	125	120	125	110	100	100	100	850
Manual training.....													140	90	140	80	280
Domestic science.....													140	85	135	75	275
Music.....	80	75	85	75	95	100	105	100	125	125	115	125	100	125	95	125	800
Physical ex.....	40	40	45	50	35	25	40	40	30	25	45	50	35	25	50	50	320
Opening ex.....	50	40	30	25	40	40	50	50	40	40	35	25	25	25			270
Recess.....	110	125	115	110	145	150	140	150	130	140	145	150	125	100	115	100	1025
Total.....	1145		1185		1545		1710		1690		1665		1690		1725		12855 ¹
Average of 50 American cities.....	1570		1600		1630		1670		1655		1660		1660		1720		13165

Note: Only schools giving all tments are considered.

(¹) Domestic science not included.

TABLE 41.—Average Amount of Time Allotted Per Week to Each Subject in 50 American Cities

	I	II	III	IV	V	VI	VII	VIII	Total
Arithmetic.....	95	150	205	230	225	225	215	220	1,565
Reading.....	410	365	290	235	195	180	150	150	1,975
Language.....	115	110	145	165	180	185	210	220	1,340
Writing.....	75	95	80	80	75	75	60	55	595
Spelling.....	85	100	115	105	95	90	80	80	750
Geography.....	25	10	75	130	160	165	150	120	835
History.....	40	50	55	90	105	110	140	180	770
Science.....	55	61	60	55	55	60	70	90	510
Art and construction.....	150	85	85	80	75	75	75	75	700
Manual Training.....	65	75	60	70	75	85	110	115	655
Music.....	70	130	75	75	70	70	70	70	630
Physical training.....	79	65	60	60	60	60	60	60	495
Opening exercises.....	60	60	60	55	50	50	50	50	435
Recess.....	135	130	130	120	115	110	100	100	940
Miscellaneous.....	120	100	135	120	120	120	120	135	970
Total.....	1,570	1,600	1,630	1,670	1,655	1,660	1,660	1,720	13,165

Note: Reading includes phonics, literature, dramatics, story-telling, memorization of poems, etc.; language includes composition, grammar, word study, etc.; arithmetic includes algebra; history includes civics; science includes nature study, elementary science, physiology and hygiene; drawing includes picture study, art, etc.; manual training includes industrial training, handwork, etc.; physical training includes athletics, gymnastics, folk dancing.

¹ Arranged from Holmes' Study in 14th Yearbook National Society for the Study of Education.

It should be noted that the list of subjects in the two tables is not identical. In the table representing 50 American cities, reading, phonics and memorization of poems are combined and recorded as reading. Word study is similarly combined with language. Science in Table 41 includes physiology, nature study and elementary science. This fact should be taken into account when making comparisons.

From a comparison of the two tables, it may be said that the averages for Janesville do not differ very radically from those in 50 American cities in the more fundamental branches. To the fundamental subjects of arithmetic, reading, language, geography and writing, Janesville devotes somewhat more than the average amount of time. Spelling receives slightly less than the average time. History and science receive much less attention than the average of 50 American cities. On the whole, Janesville cannot be accused of neglecting the fundamental subjects, and any failures to secure satisfactory results in the teaching of these subjects cannot be attributed to lack of time. The city is not overemphasizing the newer subjects, such as music, drawing, manual training, domestic science and physical training.

This may be noted more particularly when the total of the average time by grades in any of these subjects is compared with the total allotted to such subjects as reading, arithmetic and language. The subjects of drawing and construction, manual training and domestic science, music and physical exercises together take up only 18% of the total time. This is slightly less than the proportion in fifty American cities. The combined studies of arithmetic, reading, language, (including phonics, memorization of poems and word study), writing and spelling take up nearly 60% of the time in Janesville. These same subjects in fifty American cities receive slightly more than 47%. It will be noted that the grand total number of minutes upon the weekly program for all grades combined, is less than that for fifty American cities. The reason for this difference is to be found in the first and second grades. The school day in Janesville for these grades is less than average length. In view of the fact that a longer rather than a shorter school day is being advocated by progressive educators, the superintendent and the board should consider the wisdom of the present practice. These grades begin work at 9 A. M. in the morning, and at 1:15 P. M. in the afternoon. The morning session closes at 11 A. M. and the afternoon session at 3:10 P. M. This makes an unusually short day and it is recommended that the morning session be increased by thirty minutes, and the afternoon by twenty minutes. This would add 250 minutes to the weekly schedule of each of these grades. The function of the school is to reach the child rather than to get rid of him. More time can well be given to construction work and to directed play. The time allotted to recess and physical training in these grades at present is less than the average of 50 American cities. No time is given to geography, history and physiology. In these grades the work in these subjects would consist principally of nature study and stories. This should receive some attention in these grades and in others. History and science are neglected in nearly every grade. Time for the teaching of these subjects can be found by reducing the excessive amount allotted to some of the fundamental subjects. Hand training receives too little attention in the primary grades. No time is assigned under the heading of manual training and that given to drawing and construction in these grades is less than the average for fifty American cities.

THE ELEMENTARY COURSE OF STUDY

No attempt has been made to pass upon the course of study in detail for the reason that the course in use previous to 1916-17 has been in the process of revision. Due to the absence of a modern and definite course of study, a somewhat chaotic condition with reference to the subject matter to be taught has existed. Teachers have had to rely upon their own judgment as to what to include and what not to include. As stated elsewhere in this report, this has resulted at times in a duplication of effort from one grade to the next. At the same time there has been little assurance that certain essentials would be taught at all. Furthermore, in the absence of a course of study, teachers have been without the suggestions on methods of presenting particular topics which good courses contain.

The teachers and the superintendent have realized the need of an up-to-date course of study. For the past year they have been engaged in preparing a new course of study in several subjects. This is commendable. The teachers have been organized into groups. Each group, under the direction of the superintendent, has devoted its efforts to a particular subject. These groups have included a course for the kindergarten department, and courses in arithmetic, geography, language and grammar, history and spelling. The progress made thus far indicates that the teachers and the superintendent have attempted to prepare courses which embody modern educational ideals in curriculum making. In each case the course includes a preliminary statement of aims, suggestions of general method to be used in teaching, and the subject matter to be taught. In the judgment of those who have examined the tentative courses, much more remains to be done in formulating more definitely the aims or ends to be accomplished and the methods of teaching which may be employed. In many respects, the suggested subject matter indicates a wholesome desire to modernize the material of instruction. It is to be hoped that the teachers will regard the progress thus far accomplished merely as preliminary.

The amount of time available for the survey has made it impossible to consider each of the tentative courses of study in detail. Numerous suggestions, however, which may be applied to the course of study will be found by a careful reading of the

chapters of this report dealing with the quality of instruction and the measurement of results in school subjects. Further suggestions of a general nature for grammar grade teachers will be found under the discussion of the proposed junior high school organization.

Certain suggestions as to the method of preparing these courses may, however, be made here. In general, those entrusted with this work will need to give careful thought to the civic, moral, social, vocational, or aesthetic values which training in any given subject should afford. This requires a consideration of the needs of the children and of the values of particular subject matter for producing the kind of efficiency desired. Individual differences among children must be taken into account. The brightest children,—those who give promise of becoming leaders in life, can by no reasonable measure of justice be expected to suffer by requiring them to cover the same subject matter or to spend the same amount of time in mastering it as the backward pupils. They are capable of grappling with new and more difficult subject matter and should be permitted to do so. Neither should the less capable children be expected to become as proficient in all or the same material of instruction that is expected of the most capable. Variations and options should be permitted, not only to meet differences in ability, but in taste or probable life vocation.

Not only the question of selection, but of arrangement must be considered. The arrangement or organization must be adapted to the teaching process. The ease with which particular methods, such as that of the problem, may be applied is conditioned upon the organization of the subject matter of the course of study. Certain organizations of subject matter make it next to impossible for any but the very best teachers to secure good teaching results.

In apportioning the work of preparing the course of study in the various subjects, it will be well to include in each group those especially skilled in teaching the particular subject and those possessing a rich knowledge of the subject itself. The results of scientific investigations in each field should be carefully considered. Illustrations of several successful methods of teaching various phases of a subject, together with lesson plans and suggested sources of reference material, should be

included. Wherever possible, it will be well to submit the tentative course in any subject to recognized specialists in the preparation of courses of study for criticism. Courses should then be given actual trial to determine their suitability and to discover needed revisions before adoption by the board. Even then continued improvement should be permitted. Provision should be made for incorporating new ideas and needs or improved methods. The course of study should be in loose leaf type-written form so that revised pages may be readily substituted.

XIII MEASURING RESULTS IN SCHOOL SUBJECTS

ARITHMETIC

In measuring the achievement of Janesville children in arithmetic three series of tests were used. The Woody series A and Courtis series B tests were used in testing the work in the fundamentals—addition, subtraction, multiplication and division. The Stone Reasoning test was used to measure ability of the children to solve written problems.

THE WOODY TESTS

The nature of the Woody tests for each of the fundamental operations may be seen from the following:

Addition

(1) 2 3 —	(2) 2 4 —	(3) 17 2 —	(4) 53 45 —	(5) 72 26 —	(6) 60 37 —	(7) = 3 + 1 =	(8) 2 + 5 + 1 =	(9) 20 10 2 30 25 —
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(10) 21 33 35 —	(11) 32 59 17 —	(12) 43 1 2 13 —	(13) 23 25 16 —	(14) 25 + 42 =	(15) 100 33 45 201 46 —	(16) 9 24 12 15 19 —	(17) 199 194 295 156 —	(18) 2563 1387 4954 2065 —
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(19) \$1.75 .25 .40 —	(20) \$12.50 16.75 15.75 —	(21) \$8.00 5.75 2.33 4.16 .94 6.32 —	(22) 547 197 685 678 456 393 525 240 152 —	(23) $\frac{1}{2} + \frac{1}{3} =$	(24) 4.0125 1.5907 4.10 8.673 —	(25) $\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} =$
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(26) 12½ 62½ 12½ 87½ —	(27) $\frac{1}{2} + \frac{1}{3} + \frac{1}{4} =$	(28) $\frac{1}{2} + \frac{1}{3} =$	(29) 4½ 2½ 5½ —	(30) 2½ 6½ 3½ —	(31) 113.46 49.6087 19.9 9.87 .0086 18.253 6.04 —	(32) $\frac{1}{2} + \frac{1}{3} + \frac{1}{4} =$
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Addition—Continued.

(33) .49 .28 .63 .95 1.69 .22 .33 .36 1.01 .56 .48 .75 .56 1.10 .18 .56	(34) $\frac{1}{2} + \frac{1}{4} =$	(35) 2 ft. 6 in. 3 ft. 5 in. 4 ft. 9 in. _____	(36) 2 yr. 5 mo. 3 yr. 6 mo. 4 yr. 9 mo. 5 yr. 2 mo. 6 yr. 7 mo. _____	(37) 164 174 214 324 ---
	(34) 25.091 + 100.4 + 25 + 98.28 + 19.3614 =			

Subtraction

(1) 8 5 —	(2) 6 0 —	(3) 2 1 —	(4) 9 3 —	(5) 4 4 —	(6) 11 7 —	(7) 13 8 —	(8) 59 12 —	(9) 78 37 —	(10) 7 - 4 =	(11) 76 60 —
(12) 27 3 —	(13) 16 9 —	(14) 50 25 —	(15) 21 9 —	(16) 270 190 —	(17) 393 178 —	(18) 1000 537 —	(19) 567482 106493 —	(20) 24 - 1 =		
(21) 10.00 3.49 —	(22) $3\frac{1}{2} - \frac{1}{4} =$	(23) 80835465 49178036 —	(24) 84 54 —	(25) 27 124 —	(26) 4 yds. 1 ft. 6 in. 2 yds. 2 ft. 3 in.					
(27) 5 yds. 1 ft. 4 in. 2 yds. 2 ft. 8 in. —	(28) 10 - 6.25 =	(29) 754 524 —	(30) 9.8063 - 9.019 =							
(31) 7.3 - 3.00081 =	(32) 1912 6 mo. 8 da. 1910 7 mo. 15 da. —	(33) 5 - 2 12 - 10 —	(34) 64 24 —	(35) $3\frac{1}{2} - 1\frac{1}{2} =$						

Multiplication

(1) $3 \times 7 =$	(2) $5 \times 1 =$	(3) $2 \times 3 =$	(4) $4 \times 8 =$	(5) $\begin{array}{r} 23 \\ 3 \\ \hline \end{array}$	(6) $\begin{array}{r} 310 \\ 4 \\ \hline \end{array}$	(7) $7 \times 9 =$	
(8) $\begin{array}{r} 50 \\ 3 \\ \hline \end{array}$	(9) $\begin{array}{r} 254 \\ 6 \\ \hline \end{array}$	(10) $\begin{array}{r} 623 \\ 7 \\ \hline \end{array}$	(11) $\begin{array}{r} 1034 \\ 8 \\ \hline \end{array}$	(12) $\begin{array}{r} 5096 \\ 6 \\ \hline \end{array}$	(13) $\begin{array}{r} 8754 \\ 8 \\ \hline \end{array}$	(14) $\begin{array}{r} 105 \\ 40 \\ \hline \end{array}$	(15) $\begin{array}{r} 235 \\ 23 \\ \hline \end{array}$
(16) $\begin{array}{r} 7998 \\ 9 \\ \hline \end{array}$	(17) $\begin{array}{r} 145 \\ 206 \\ \hline \end{array}$	(18) $\begin{array}{r} 24 \\ 234 \\ \hline \end{array}$	(19) $\begin{array}{r} 9.6 \\ 4 \\ \hline \end{array}$	(20) $\begin{array}{r} 287 \\ .05 \\ \hline \end{array}$	(21) $\begin{array}{r} 24 \\ 24 \\ \hline \end{array}$	(22) $8 \times 54 =$	
(23) $1\frac{1}{2} \times 8 =$	(24) $\begin{array}{r} 16 \\ 24 \\ \hline \end{array}$	(25) $\frac{1}{2} \times \frac{1}{4} =$	(26) $\begin{array}{r} 9742 \\ 59 \\ \hline \end{array}$	(27) $\begin{array}{r} 6.25 \\ 3.2 \\ \hline \end{array}$	(28) $\begin{array}{r} .0123 \\ 9.8 \\ \hline \end{array}$	(29) $\frac{1}{4} \times 2 =$	
(30) $\begin{array}{r} 2.49 \\ 36 \\ \hline \end{array}$	(31) $\frac{12}{25} \times \frac{15}{32} =$	(32) $\begin{array}{r} 6 \text{ dollars } 48 \\ 8 \\ \hline \end{array} \text{ cents}$	(33) $24 \times 34 =$	(34) $\frac{1}{2} \times \frac{1}{4} =$			
(35) $\begin{array}{r} 9874 \\ 25 \\ \hline \end{array}$	(36) $3 \text{ ft. } 5 \text{ in.}$ $\quad \quad 5$	(37) $24 \times 44 \times 14 =$	(38) $\begin{array}{r} .00634 \\ .084 \\ \hline \end{array}$	(39) $8 \text{ ft. } 94 \text{ in.}$ $\quad \quad 9$			

Division

(1) $\overline{3 \over 6}$	(2) $\overline{9 \over 27}$	(3) $\overline{4 \over 28}$	(4) $\overline{1 \over 5}$	(5) $\overline{9 \over 36}$	(6) $\overline{8 \over 39}$
(7) $4 + 2 =$	(8) $\overline{9 \over 0}$	(9) $\overline{1 \over 1}$	(10) $6 \times \dots = 30$	(11) $\overline{2 \over 13}$	(12) $2 + 2 =$
(13) $\overline{4 \over 24 \text{ lbs. 8 oz.}}$	(14) $\overline{8 \over 5856}$	(15) $\frac{1}{4} \text{ of } 128 =$	(16) $\overline{68 \over 2108}$	(17) $50 + 7 =$	
(18) $\overline{13 \over 65065}$	(19) $248 + 7 =$	(20) $\overline{2.1 \over 25.2}$	(21) $\overline{25 \over 9750}$	(22) $\overline{2 \over 13.50}$	
(23) $\overline{28 \over 469}$	(24) $\overline{75 \over 2250300}$	(25) $\overline{2400 \over 504000}$	(26) $\overline{12 \over 2.76}$		
(27) $\frac{1}{4} \text{ of } .624 =$	(28) $\overline{.003 \over .0936}$	(29) $3\frac{1}{2} + 9 =$	(30) $\frac{1}{2} + 5 =$		
(31) $\overline{\frac{5}{4} \div \frac{3}{5} =}$		(32) $9\frac{1}{2} + 3\frac{1}{2} =$		(33) $\overline{2 \over 3756}$	
(34) $62.50 + 1\frac{1}{2} =$		(35) $\overline{531 \over 37722}$		(36) $\overline{9 \over 69 \text{ lbs. 9 oz.}}$	

The tests in this series are so arranged as to present a graduated scale of difficulty. The first problem in each test is a very simple problem and the next is slightly more difficult. Each succeeding problem increases in difficulty and the achievement of the class is measured by the degree of difficulty of the problems which the group can solve. A reasonable length of time, twenty minutes, is allowed for each test in the series. Not more than two of the tests were given in any half day. The tests in addition, subtraction and multiplication were given in all elementary grades beginning with the third. Division was given in grades four to eight.

Uniform directions were given in each room¹. After the headings had been filled in the person giving the test instructed the class as follows: "This is to be an exercise in division, (in case of division). The game is to see how many problems you can divide and get right in twenty minutes. Every problem on this sheet is a division problem, an 'into' problem. Work as many of them as you can and be sure you get them right. If you come to one you cannot work leave it out and go on to the next. Do all of your work on this sheet and don't ask anybody any questions. Begin." Each teacher was given

¹ These are practically identical with those recommended by Dr. Woody.

an answer sheet for use in correcting the papers. She was instructed to check each paper twice. The answers were then rechecked by a second person.

The Distribution of Scores

The distribution of the scores made by the children in each grade in the four fundamental operations is shown in the accompanying table:

Distribution of Scores in Woody Arithmetic Series A—

TABLE 42

Addition

TABLE 43

Subtraction

No. problems correct	III	IV	V	VI	VII	VIII	No. Problems correct	III	IV	V	VI	VII	VIII
0.....							0.....	1	1				
1.....	1						1.....	2					
2.....	1						2.....	4		2			
3.....	1						3.....	3					
4.....	1						4.....				1		
5.....	2						5.....	1	3				
6.....	3						6.....			1			1
7.....	3						7.....	9	3				
8.....	6	1					8.....	5	2				
9.....	7						9.....	6	2				
10.....	7	2					10.....	20	4				
11.....	4						11.....	19	2	1			
12.....	12	2					12.....	12	7	1			1
13.....	13	5	1				13.....	20	3	2			
14.....	7	5	1				14.....	16	12	1			
15.....	11	13					15.....	8	9	6		1	
16.....	26	9	3		1		16.....	13	11	3	1		
17.....	23	18	5				17.....	12	18	12	4		
18.....	13	24	6				18.....	5	19	12	4	1	
19.....	11	16	6	2			19.....	10	28	15	9	2	
20.....	12	16	14	5	2		20.....	7	19	31	9	3	1
21.....	14	25	15	6	1		21.....	5	18	19	10	4	3
22.....	3	12	16	8	3	1	22.....	1	5	13	5	4	4
23.....	4	12	17	10	2	3	23.....	1	1	15	21	12	2
24.....	1	6	15	9	4	3	24.....		1	4	10	4	7
25.....	1	4	9	10		1	25.....		1	2	16	10	1
26.....		2	10	5	2	3	26.....			2	17	12	16
27.....		2	4	9	6	5	27.....				13	13	13
28.....			9	11	6	8	28.....				10	11	17
29.....			3	23	6	4	29.....				8	8	17
30.....				11	11	5	30.....			1	6	13	18
31.....			5	14	11	10	31.....				2	14	12
32.....				8	20	23	32.....				4	12	11
33.....			1	11	9	13	33.....				3	14	7
34.....				10	15	13	34.....					5	6
35.....			1	7	23	17	35.....					4	2
36.....				1	14	12	36.....						
37.....				2	7	11	37.....						
38.....					3	4	38.....						
39.....							39.....						
40.....							40.....						
Total.....	187	174	143	162	149	186	Total.....	80	169	143	153	147	189
Janesville Median.....	16.6	19.5	23.3	29.3	32.8	33.2	Janesville Median.....	13.4	18.4	20.5	25.2	28.7	29.2
Woody's Standard Median.....	14.5	18.3	23.1	29.8	32.4	34.	Woody's Standard Median.....	11.2	15.7	20.4	25.	28.5	31.7
Wisconsin Median.....	15.7	20.2	22.7	28.4	31.9	33.1	Wisconsin Median.....	13.3	18.1	20.8	25.6	28.4	30.4

Distribution of Scores in Woody Arithmetic Series A—

TABLE 44

Multiplication

TABLE 45

Division

No. problems correct	III	IV	V	VI	VII	VIII	No. problems correct	IV	V	VI	VII	VIII
0	17						0					
1	5						1	1				
2	6						2					
3	10						3	1				
4	14						4	1				
5	8	4					5	3				
6	16	2	3				6	3	1			
7	13	3					7	8	4			
8	14	5					8	14	3			
9	13	4	1				9	18	4			
10	4	7	1				10	25	6	1		
11	12	9	2				11	17	6			
12	12	12	4				12	19	12			
13	11	13	4				13	7	11	1	1	
14	7	11	5				14	15	8	2		
15	3	9	9				15	4	11	7		1
16		16	10	1			16	5	10	8	2	
17	2	21	13	1			17	10	10	8	1	
18	1	27	18	4	1		18	5	11	9	1	1
19	1	10	18	6	1		19	3	13	5	1	1
20		12	27	6		1	20	5	12	11	4	3
21		3	10	16		3	21	2	4	9	6	4
22			2	5	8		22		5	13	4	5
23		1	2	7	4	1	23	2	5	13	8	9
24			3	6	2		24		4	13	9	7
25			5	13	3	3	25			10	17	7
26			3	6	7	2	26			13	14	11
27			2	11	3	6	27		1	9	13	17
28				12	11	9	28			3	16	16
29			1	8	14	11	29		1	7	16	12
30			1	10	14	9	30			5	11	15
31				9	11	16	31			2	2	17
32				12	14	21	32			1	11	6
33				9	19	15	33			2	6	3
34				6	13	11	34			2	2	1
35					13	12	35				2	2
36				2	9	12	36				1	1
37					1	6	37					
38						5	38					
39						1	39					
40							40					
Total.....	169	172	148	154	157	139	Total.....	168	142	154	148	139
Janesville							Janesville					
Median.....	7.7	16.4	19.2	27.3	32.3	32.4	Median.....	11.6	16.5	23.2	27.5	28.2
Woody's							Woody's					
Standard							Standard					
Median.....	4.7	11.1	18.3	26.1	30.6	32.9	Median.....	9.9	16.5	23.8	27.4	30.1
Wisconsin							Wisconsin					
Median.....	6.8	15.2	19.2	27.2	30.9	33.2	Median.....	13.5	19.6	25.1	28.4	30.

As in the case of the results in other subjects certain facts are revealed by these distribution tables. We may note:

- (1) Progress from grade to grade.
- (2) An overlapping of grade abilities.
- (3) Large variations within each grade.
- (4) The medians of achievement for Janesville.

(1) *Progress from grade to grade*—A distinct progress from grade to grade is to be seen from the greater number of increasingly difficult problems solved. Progress may be observed roughly from the general movement of the figures toward the

lower extremes of the distribution sheets as we proceed from grade to grade. This progress is especially noticeable in the lower grades but is less evident in upper grades where problems are of course more difficult. A more definite idea of the improvement which takes place from grade to grade may be gained by reference to the graphical representation of the distribution table for division in Fig. II. In the graph for each grade the number of children is reduced to a basis of 100%.

It is not surprising that these tests in the fundamental operations reveal progress from grade to grade, since the problems gradually grow more difficult. Lower grade pupils soon found that some of the problems were beyond their ability. This was to be expected. The number of examples which children are expected to solve increases steadily from grade to grade. This is especially true in the lower grades. In the upper grades, however, the degree of accuracy attained in processes with which pupils are supposedly familiar rather than difficulties offered by the complexity of the problems is a decided factor effecting the amount of progress, e. g. few processes involved in the division test are commonly introduced later than grade six. Decimals, fractions, denominate numbers and reduction of fractional remainders which are the processes on which pupils most frequently fail on the test are all processes which pupils in upper grades have usually been taught.

(2) *The overlapping of grade abilities*—In any uniform test which contains problems so easy that the poorest child in any grade can solve some of them and also problems that are difficult for even the most capable pupils in every grade we may expect to find a degree of overlapping. The best fourth grade pupils will solve more problems than a number in the fifth grade or even the sixth, seventh, and eighth grades. This overlapping of abilities is serious only when it becomes very marked. That it is quite marked in Janesville is evident. If a line be drawn in the graph showing the distribution of division scores at problem 15, Fig. II, it will be seen that no small number of fourth graders made a score better than that of the poorest eighth grade score. Ten per cent of the eighth graders did poorer than the best fourth graders in division. In addition and subtraction some third grade children excelled some eighth graders.

(3) *The variation within grades*—In every grade in each

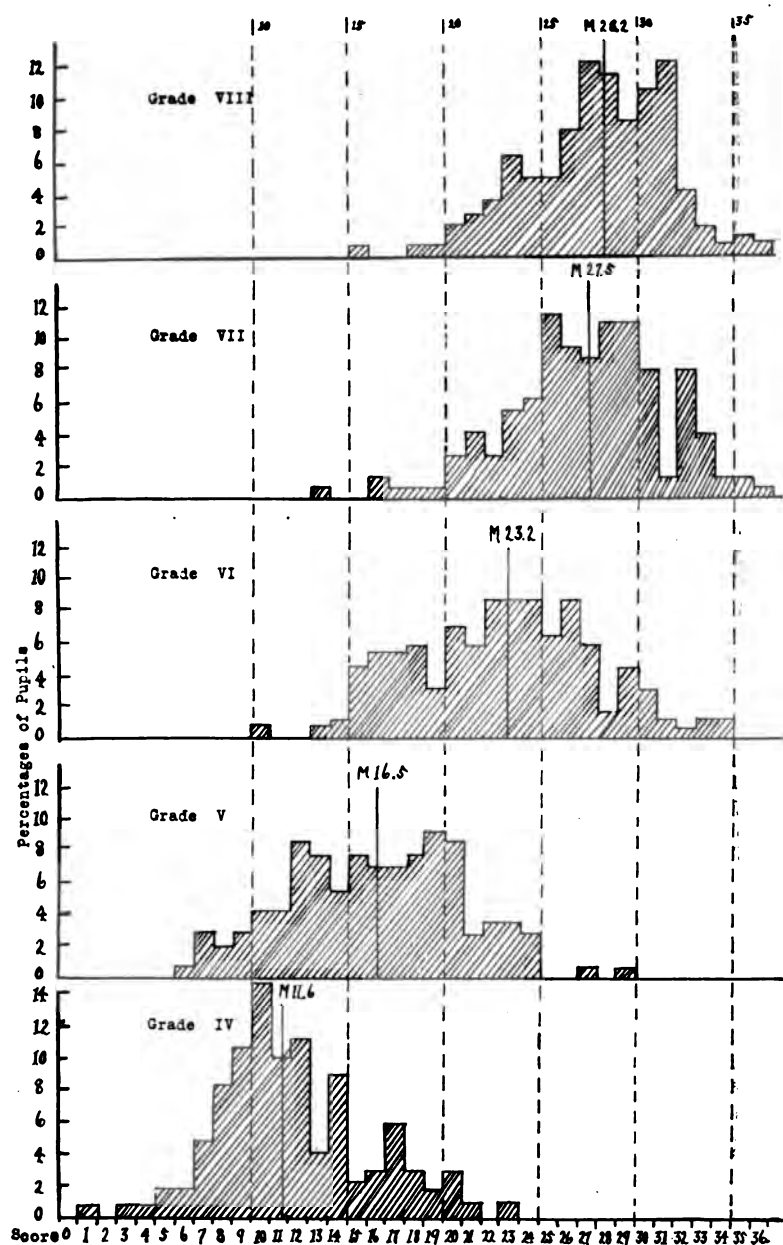


Fig.II. Distribution of Division Scores by Grades

of the four tests there is a wide range between the scores made by the best and the poorest. This is represented in the distribution table of the scores. For division it is represented graphically in Fig. II by the width of the areas enclosing the scores of each grade. A more satisfactory condition would be represented by less width and greater height near the center of the class areas in each case. Extreme variations in the scores made by pupils in the same grade should receive the careful attention of teachers and supervisors. It is difficult to understand why some children in nearly every grade solved fewer than ten subtraction problems correctly or why some children as far advanced as the seventh and eighth grades should solve less than half of the total number of problems in division. Children who make a score far below the median for the class should be made the subject of individual study by the teacher. When 10% of the eighth grade children show poorer results in division than the best fourth grade pupils some attention to drill in the fundamentals is necessary for these children. Children who make unusually high scores for their grades should be considered as possible candidates for early promotion to the next higher grade, particularly if their work in other subjects shows a similar proficiency. A better teaching economy may be accomplished by requiring less time to be devoted to the subject by these pupils. When children in any grade can solve more difficult problems than 75% of the children in the next higher grade, it is not usually profitable for them to spend much time on that type of work. See table 45. There may be other subjects to which these children could well devote more time.

More satisfactory results in teaching can be secured by grouping children with others of a similar degree of proficiency. Children who may be counted upon to leave school before they have progressed very far should be given work of a type that is suited to their interests and needs. It is not necessary that they be required to complete the same course of study as do others who exhibit a fondness for the subject.

(4) *The Medians of Achievement for Janesville*—A common method of judging whether results are satisfactory is to compare the median or middle performance of each grade with the standard median for that grade. The median refers to the mark that one-half of a class or grade exceeds and that the other half fails to reach. If the median scores for Janesville

are compared with Woody's standard medians the lower grades do very well. When compared with scores made by several thousand Wisconsin children the results are not so flattering, particularly in division where they fall below. The fifth, sixth and seventh grades differ but little from Woody's standards except in multiplication where Janesville children are somewhat superior. These grades compare favorably with those of other Wisconsin cities except in division. The showing of the eighth grade is unsatisfactory. It is particularly weak in subtraction and division.

From these results it would seem that the fundamentals are not underemphasized in the lower grades. That the advantage decreases in succeeding grades and is in fact lost in the eighth would indicate that teachers cannot be content to rest upon their oars at any time. Even in advanced elementary grades a certain amount of well-conducted drill based upon the needs of the children in the class is necessary.

The unusual proficiency in the lower grades becomes more striking still when we compare the scores in multiplication made by the pupils who were given special promotion at the time the system of semiannual promotions was instituted with those who remained in the grade. The comparative scores in multiplication made by two classes selected at random from each grade are given below.

TABLE 46.—Scores Made by Promoted and Nonpromoted in Multiplication

Median	III		IV		V		VI		VII		VIII	
	P	N. P.	P	N. P.	P	N. P.	P	N. P.	P	N. P.	P	N. P.
Class 1.....	.7	9.8	12.5	18.4	16.5	16.5	25.5	28.3	35.7	29.8	31.0	32.1
Class 2.....	6.8	9.7	12.2	18.9	18.	18.5	19.9	31.9	31.8	31.5	32.8	33.
Combined	2.5	9.7	12.2	18.6	17.2	17.3	21.6	30.2	32.8	30.8	31.9	32.5
No. pupils represented	21.	47.	31.	37.	29.	24.	33.	48.	29.	35.	25.	36.
Standard	4.7		11.1		18.3		26.1		30.6		32.9	

Were it not for the presence of these specially promoted pupils in grades three and four the class scores for these grades would be even higher. On the other hand it cannot well be said that the presence of these children in the upper grades has very materially reduced the class scores as far as results in

multiplication may be taken as an index. Indeed, the promoted groups in grade seven for the schools here represented made the better scores. In the sixth grade the promoted pupils did less than the expected standard. The fact that some promoted groups made a good showing and others a poor one seems to indicate that as far as ability in the fundamentals of arithmetic is concerned the pupils were not always well selected for the special promotion. It appears, however, to have been amply justified in most cases.

Additional facts as to the achievements in arithmetic are revealed when we examine the scores made in each building. On the surface results for any entire grade of the city may appear fairly satisfactory. Unusual proficiency in certain rooms tends to offset extreme weakness in others.

Variation in Median Scores by Buildings

The variations within the same grade in the different buildings for each of the tests in fundamentals may be seen from the accompanying table.

TABLE 47.—Median Scores in Woody Arithmetic Series A—By Buildings

		Buildings									Janes- ville Median	Standard Median
		1	2	3	4	5	6	7	8	9		
Addition												
Grade III.....	17.	14.	.....	12.8	20.	12.3	16.7	19.	.....	16.6	14.5
" IV.....	17.4	21.1	.....	18.8	21.	19.3	21.7	19.3	.....	19.5	18.3
" V.....	20.2	.....	26.8	24.5	.....	23.	.....	23.5	24.	23.3	23.1
" VI.....	31.7	.....	27.9	28.1	.....	29.3	.....	.....	.....	29.3	29.8
" VII.....	33.8	.....	32.	.....	.....	32.9	31.5	35.1	.....	32.8	32.4
" VIII.....	35.	.....	32.7	.....	.....	32.	32.9	33.5	.....	33.2	34.
Subtraction												
Grade III.....	14.2	13.	.....	11.5	19.3	12.	11.4	15.	.....	13.4	11.2
" IV.....	19.4	17.3	.....	19.8	20.1	17.	19.4	17.4	.....	18.4	15.7
" V.....	19.3	.....	20.5	21.3	.....	21.2	.....	20.4	20.9	20.5	20.4
" VI.....	26.4	.....	21.9	24.9	.....	25.1	.....	.....	.....	25.2	25.
" VII.....	26.	.....	26	.....	.....	29.3	29.3	31.4	.....	28.7	28.5
" VIII.....	29.9	.....	28.7	.....	.....	30.	28.8	27.9	.....	29.2	31.7
Multiplication												
Grade III.....	9.1	9.5	.....	2.5	12.2	5.7	6.8	6.3	.....	7.7	4.7
" IV.....	16.3	17.5	.....	12.3	19.	13.7	16.8	16.5	.....	16.4	11.1
" V.....	16.8	.....	20.3	19.3	.....	20.7	.....	18.	18.4	19.2	18.3
" VI.....	29.8	.....	27.5	27.	.....	25.6	.....	.....	.....	27.3	26.1
" VII.....	33.1	.....	30.	.....	.....	31.5	31.5	34.2	.....	32.3	30.6
" VIII.....	34.3	.....	31.3	.....	.....	31.7	31.7	33.2	.....	32.4	32.9
Division												
Grade III.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" IV.....	9.9	13.5	.....	10.9	18.	10.9	12.6	10.1	.....	11.6	9.9
" V.....	12.9	.....	18.8	20.5	.....	19.5	.....	15.3	15.3	16.5	16.5
" VI.....	26.8	.....	22.3	22.5	.....	23.7	.....	.....	.....	23.2	23.8
" VII.....	26.	.....	26.5	.....	.....	27.3	27.1	27.5	.....	27.5	27.4
" VIII.....	27.9	.....	27.7	.....	.....	28.2	28.8	28.2	.....	28.2	30.1

Why the children of certain rooms should be consistently high and others low in all of the fundamentals is a matter demanding supervisory attention. It is a striking fact that in grade seven the children in building number eight excel in every one of the four fundamentals. This is not to be explained by the amount of time spent on arithmetic in this room for it spends no greater amount than any other seventh grade. There are rooms, however, such as grade four in building seven of the table where unusual results are explained by the large amount of time devoted to the subject. In the main, however, time and results bear little relation.

As may be expected with tests including problems of different degrees of difficulty and requiring familiarity with a variety of processes certain types of problems proved more troublesome to pupils than others.

Examples Which Proved Difficult

The scores made by the pupils on each of the tests in the fundamentals were recorded in such a manner as to indicate the frequency with which each particular example was solved correctly and incorrectly. The accompanying table indicates the number of children in each grade who took the test and the number of times each problem in division was solved correctly. A study of the table reveals the particular problems which proved difficult for each grade.

The table exposes some facts as to the teaching which are interesting to say the least. It should be a matter of concern to teachers when pupils miss examples as easy as a number of those on the test. There was only one problem which was not missed at least once in every grade. It is difficult to understand why more than one-half of the fourth grade children should miss an example like No. 6, which is $3\overline{)39}$ or why only 54 of the 129 pupils in grade VI can solve the example $2.1\overline{)25.2}$. However much one may be surprised at the showing made by lower grade pupils on some problems, this is not so striking when viewed in the light of the scores made by eighth grade pupils on the same examples. Some of the more difficult problems for eighth grade pupils may be seen from the table following. The table indi-

TABLE 48.—*Number of Pupils Solving Each Particular Example in Division Correctly*

Problems		IV	V	VI	VII	VIII
1	3)6	151	145	123	147	135
2	9)27	161	162	127	147	138
3	4)28	155	159	126	145	138
4	1)5	154	152	126	145	136
5	9)36	159	165	128	148	136
6	3)39	76	136	120	145	137
7	4 + 2 =	118	146	122	141	136
8	9)0	187	145	117	136	128
9	1)1	148	146	122	137	127
10	6 x . . = 30	129	150	121	146	137
11	2)13	98	125	117	143	136
12	2 + 2 =	88	122	111	113	100
13	4)24 lbs. 8 oz	38	98	85	128	114
14	8)5856	78	112	117	136	133
15	$\frac{1}{2}$ of 128 =	35	89	99	135	138
16	68)2108	40	87	97	117	123
17	50 + 7 =	38	86	90	129	116
18	13)65065	21	60	85	117	107
19	248 + 7 =	16	73	91	117	108
20	2.1)25.2	42	87	54	102	94
21	25)9750	13	58	73	112	108
22	2)13.50	33	71	83	128	119
23	23)469	24	63	95	102	111
24	75)2250300	9	57	68	109	111
25	2400)504000	6	47	62	107	104
26	12)2.76	3	41	71	124	113
27	$\frac{1}{2}$ of 624 =	6	13	64	105	121
28	.003) 0936		17	32	80	74
29	$3\frac{1}{2}$ + 9 =		15	32	63	47
30	$\frac{1}{2}$ + 5 =		14	27	68	71
31	$\frac{5}{4}$ + $\frac{3}{5}$ =		6	24	42	47
32	$9\frac{1}{2}$ + $3\frac{1}{2}$ =		10	19	72	53
33	52)3756	2	9	17	49	63
34	62.50 + 14 =		6	10	60	68
35	531)37722		1	8	36	39
36	9)69 lbs. 9 oz.			4	28	25
Number of children taking test		168	167	129	148	139

cates the score in per cent for the entire grade and each eighth grade separately on ten examples.

TABLE 49.—Ten Troublesome Examples in Grade VIII

Example	Per cent of pupils who solved each of ten examples correctly—for the city and by buildings					
	City	Buildings				
		1	2	3	4	5
$2 \div 2 =$	71.9	64.5	61.1	89.7	71.4	69.7
$2.1)25.2$	67.6	61.3	66.7	65.5	75.	69.7
$25)9750$	77.7	74.2	77.8	79.3	82.1	75.8
$.003) .0936$	53.2	35.5	55.6	65.5	46.4	72.7
$3\frac{1}{2} \div 9 =$	33.8	35.5	5.6	34.4	42.9	39.3
$\frac{1}{2} \div 5 =$	51.1	48.4	27.8	51.7	64.3	54.5
$\frac{3}{4} \div \frac{3}{8} =$	33.8	38.7	16.7	34.5	32.1	39.4
$52)3756$	45.3	38.7	61.1	41.4	57.1	36.3
$531)37722$	28.1	25.8	33.3	27.6	32.1	24.2
$9)69 \text{ lbs. } 9 \text{ oz.}$	18.	35.5	5.6	3.5	25.	15.
No. pupils taking test.....	139	31	18	29	28	33

Some of the facts revealed by the table are astonishing indeed. It is almost inconceivable that only 72% of the pupils in grade eight solved the example $2 \div 2 =$ correctly. Incorrect answers often given were 2 and 0. In building two only 61.1% of the class solved this problem correctly. A problem like $3\frac{1}{2} \div 9 =$ is beyond two-thirds of the eighth grade children. But what is even worse is the fact that only 45.3% of the eighth grade can obtain the correct answer to the problem $52)3756$. Too many failed to reduce the fractional remainder in this example.

A striking difference in the effectiveness with which different processes are taught by different teachers is revealed by a comparison of the scores made by each eighth grade class on these problems. Building two makes the poorest showing on five of the ten problems while building four makes the best score obtained on four of the ten examples. The class in building two contains only two pupils who have not been in the grade since September, while that in building four is almost evenly divided between those who entered the grade in September and those who entered in January.

Particular Processes Which Proved Difficult

The results found from a study of the ten problems above suggests the need of specific drill upon particular processes. Quite contrary to a common opinion that a poor showing by any group of children on problems in division is to be remedied by devoting more attention to drill in division or that improvement in multiplication is to be brought about by drill upon that phase of arithmetic, the table suggests that the weakness may be in certain forms of division exercises. In that event drill upon division as a whole rather than upon certain processes in which the pupils are weak would be poor economy. To determine more fully specific processes in which Janesville pupils are weak an analysis was made of the errors which were made by seventh and eighth grade pupils in the division test.

The different forms of errors found among 1500 that were analyzed are given below together with the frequency with which each occurred. The relative frequency of each may be judged from the length of the bar opposite in each case.

FIGURE III

	No.	%	4%	8%	12%	16%
1. Incorrect Inverting or Failure to Invert	277	18.46				
2. Incorrect Division	246	16.4				
3. Incorrect placing of, or omitting of decimal point	189	12.6				
4. Failure to reduce or incorrect reduction of remainder or answer	133	8.87				
5. Incorrect division of denominate numbers	132	8.8				
6. Omitting or adding cipher in quotient	101	6.73				
7. Not completing division	92	6.13				
8. Incorrect subtraction	81	5.4				
9. Incorrect multiplication	61	4.07				
10. Using incorrect denominator of remainder	36	2.4				
11. Failure to classify result	35	2.33				
12. Failure to employ both parts of fraction	29	1.93				
13. Incorrect placing or bringing down	28	1.87				
14. Incorrect reduction of mixed numbers	28	1.87				
15. Failure to recognize the sign of operation	15	1.				
16. Incorrect addition	7	.47				
17. Error in copying	4	.27				
18. Illegible answer	4	.27				
19. Incorrect cancellation	2	.13				
Total	1500	100%				

In this analysis of errors in division it is to be noted that there is, of course, a difference in the number of possibilities for making each of the various type errors. Among those processes offering a greater chance for error are those of simple subtraction, multiplication, division and placing. Decimals occur in only five of the thirty-six exercises and a familiarity with the process of inverting is necessary in five. These two processes, however, are among those on which pupils most frequently fail.

It should be clear to any observer that the need of the children who made the 1500 errors in the test in division is not drill in pure division alone. The greatest source of weakness on the part of these children occurs in connection with examples which involve such processes as inverting, the use of decimals, the reduction of a remainder, denominate numbers, and the placing of a cipher in the quotient. This does not mean that a few lessons for the entire class need necessarily be devoted to drill upon each of these particular processes. For a portion of the class this might be a waste of valuable time. Some children who are weak in one or two processes may be strong in others. That drill will probably be most effective which affords each individual well directed practice upon those operations in which he or she is weak. When individual drill is not feasible group drill lessons may be utilized. This will require more thinking, more study of individual and class needs, and more careful planning on the part of the teacher, but if well done it should mean more economy in time, achievement, and interest on the part of the pupil.

A desirable habit to be cultivated in all teaching of arithmetic is that of forming a quick rough estimate of the answer in every operation. When eighth grade pupils divide 469 by 23 and obtain $2\frac{9}{23}$ as many did, it is certain that those children have not formed the habit of estimating answers. To show a pupil that he has omitted a cipher in the quotient and even to drill him thoroughly upon that process is not sufficient. It does not prevent him from accepting absurd answers in other problems. It is the general habit of estimating answers that should be aimed at here and not alone the highly specialized one of the particular process of putting down ciphers.

Another habit which many Janesville children have not

formed is that of checking all answers. Many errors are traceable to this fault. No competent business man, bookkeeper, banker, or statistician thinks of accepting a statement of figures totally unchecked. To do so would spell failure. Teachers should not be unmindful of the fact that boys and girls expect to share in such responsibility later in life and no opportunity should be lost to train them for it.

THE COURTIS TESTS

The Courtis Tests in Fundamentals Series B were given in two buildings, the Jefferson and Washington as representative of the city. The test in each fundamental consists of several easy examples of presumably equal difficulty. A selected sample from each test is given below.

Addition	Subtraction	Multiplication	Division
136 340 988 386 353 904 547 192 439 <hr/>	75088824 57406394 <hr/>	5368 95 <hr/>	49)28420

A definite amount of time was given for each test; addition and division eight minutes each, subtraction four, and multiplication six. Each test purposely contains more problems than any pupil can solve in the time allowed. The test thus becomes one of speed and accuracy.

The average of the scores for each building and the standard of achievement for each grade and test in both speed and accuracy may be seen from the table following.

TABLE 50.—Average Results on Courtis Tests

Addition										
	IV		V		VI		VII		VIII	
	Speed	Accuracy	Speed	Accuracy	Speed	Accuracy	Speed	Accuracy	Speed	Accuracy
Average of two buildings	5.5	1.9	7.4	4.5	8.6	5.2	9.3	6.2	10.2	5.8
Standard average.....	7.4	4.7	8.6	6.	9.8	7.2	10.9	8.2	11.6	8.8
Subtraction										
Average of two buildings	6.4	3.1	9.7	7.1	8.6	5.2	11.2	8.9	12.6	11.
Standard average.....	7.4	5.9	9.	7.5	10.3	8.8	11.6	10.	12.9	11.2
Multiplication										
Average of two buildings	6.5	2.7	7.2	5.2	8.6	5.2	8.3	6.	10.7	8.7
Standard average.....	6.2	4.2	7.5	5.6	9.1	7.1	10.2	8.2	11.5	9.3
Division										
Average of two buildings	2.	.6	5.3	4.1	8.6	5.2	8.6	7.1	10.6	9.3
Standard average.....	4.6	.....	6.1	4.7	8.2	7.1	9.6	8.6	10.7	9.7

Speed here refers to the number of problems attempted and accuracy to the number correct. As far as the results from the two schools tested are representative of the school system it is to be noted that the children did not do as well as was to be expected in either the number of examples attempted or the number correct. Only grade four in multiplication and grade five in subtraction reached the standard for speed. Only grade eight in division reached the standard for accuracy. The lower grades, which it will be recalled, did well on the Woody tests, did not show unusual ability on the Courtis tests. This indicates lack of sufficient emphasis upon rapid and accurate calculation in the schools.

While June standards may be criticised as being somewhat high certainly classes which do not exceed the standard of children one grade lower are by no means to be excused. This occurred in at least six of the twenty cases. The standard scores include both A and B children. All of the pupils here represented in grade six are A pupils i. e., children who have been in the grade since September. These should be expected to exceed the standard, but they failed to do so on the test.

THE STONE REASONING TEST

Even though a school system may be securing satisfactory results in the fundamental operations it may or may not be achieving satisfactory results in problems requiring a careful analysis and selection of the various operations which must be performed. Quite frequently, though not necessarily, it occurs that proficiency in the fundamentals is accompanied by proficiency in thought or reasoning processes. When a child has acquired such a degree of attainment in performing the fundamental operations that many of them may be spoken of as "automatic" he should be less absorbed with the mechanical side of the work and freer to devote attention to the analysis of a problem. This is a common assumption, which is not without some foundation in fact. The achievement of the pupils in the fundamentals it will be recalled was not on the whole above the average of children in other school systems. Hence it will not be surprising if we find no better than an average showing on the test in reasoning problems. A copy of the test used together with the value assigned to each problem may be seen below.

Problem Value	Solve as many of the following problems as you have time for; work them in order as numbered:
1.0	1. If you buy 2 tablets at 7 cents each and a book for 65 cents, how much change should you receive from a two-dollar bill?
1.0	2. John sold 4 Saturday Evening Posts at 5 cents each. He kept $\frac{1}{2}$ the money and with the other $\frac{1}{2}$ he bought Sunday papers at 2 cents each. How many did he buy?
1.0	3. If James had 4 times as much money as George, he would have \$16. How much money has George?
1.0	4. How many pencils can you buy for 50 cents at the rate of 2 for 5 cents?
1.0	5. The uniforms for a baseball nine cost \$2.50 each. The shoes cost \$2 a pair. What was the total cost of uniforms and shoes for the nine?
1.4	6. In the schools of a certain city there are 2,200 pupils; $\frac{1}{4}$ are in the primary grades, $\frac{1}{4}$ in the grammar grades, $\frac{1}{4}$ in the High School and the rest in the night school. How many pupils are there in the night school?
1.2	7. If $3\frac{1}{2}$ tons of coal cost \$21, what will $5\frac{1}{2}$ tons cost?
1.6	8. A news dealer bought some magazines for \$1. He sold them for \$1.20, gaining 5 cents on each magazine. How many magazines were there?
2.0	9. A girl spent $\frac{1}{4}$ of her money for car fare, and three times as much for clothes. Half of what she had left was 80 cents. How much money did she have at first?
2.0	10. Two girls receive \$2.10 for making button-holes. One makes 42, the other 28. How shall they divide the money?
2.0	11. Mr. Brown paid one-third of the cost of a building; Mr. Johnson paid $\frac{1}{4}$ the cost. Mr. Johnson received \$500 more annual rent than Mr. Brown. How much did each receive?
2.0	12. A freight train left Albany for New York at 6 o'clock. An express left on the same track at 8 o'clock. It went at the rate of 40 miles an hour. At what time of day will it overtake the freight train if the freight train stops after it has gone 56 miles?

Exactly fifteen minutes were allowed for the test. Each problem was marked on the basis of right or wrong answers. No credit was given for solutions that were only partly correct. While it may be held by some that this was unfair it should be noted that the conditions were exactly similar to those observed in the surveys of other cities with which comparisons are made. More than that an attempt to score the papers by allowing credit for answers partly correct did not prove satisfactory. Papers which gave answers only could not then be used. This suggested a comparison of the scores attained by pupils who performed the operations mentally and put down answers only with those of pupils who wrote out the work of each step. A random selection of papers from each group was made and results tabulated. The results were in favor of those who put down answers only and the method of scoring part "corrects" was therefore rejected.

In view of the fact that pupils who do not write out an elaborate analysis of each problem did not do as well as those who wrote answers only it is evident that a grave question is raised as to the relative merits of the teaching method. Teachers will need to observe classroom results from day to day to discover when it is no longer profitable to continue an elaborate analysis of each problem solved. Teachers should remember that it is a habit of thinking which is desired and not a methodical form for exhibiting the child's work. If a pupil has acquired such a degree of proficiency that he analyzes the problem and performs the operations mentally it is clear that any method which continues to require him to write out an elaborate analysis of each step is wasteful. Elaborate statements are sometimes useful in teaching a new process but a careful observation of results is necessary to determine when such procedure is no longer profitable.

The Median Scores—Reasoning Problems

The showing of Janesville's children is not satisfactory in this phase of arithmetic. This may be seen by comparing Janesville medians with those for Butte and Salt Lake included in the table showing the distribution of scores in the reasoning test. The standing for each grade as compared with Butte and Salt Lake for each grade is shown in graphic form in Fig. IV.

TABLE 51.—Distribution of Scores in Stone Reasoning Test

No. Problems Correct	V	VI	VII	VIII
0	34	8	2	1
1	25	26	3	1
2	36	31	6	5
3	32	42	13	8
4	10	24	34	18
5	7	20	31	28
6	1	6	23	24
7		1	13	10
8		2	6	12
9			11	11
10				4
11			2	6
12			1	1
13				5
14				
15				1
16				
17				2
18				
Total.....	145	160	145	137
Median.....	2.4	3.4	5.5	6.3
Salt Lake Median.....	4.3	6.9	9.1	11.
Butte Median	2.7	4.1	6.3	8.2

In no grade did Janesville children do as well as the children of either Butte or Salt Lake. It should be observed that the test in each of the latter cities was given approximately two months later in the year. This is not however a sufficient explanation as to why the scores for the sixth grade in Janesville should be lower than that of the fifth in Salt Lake or why the

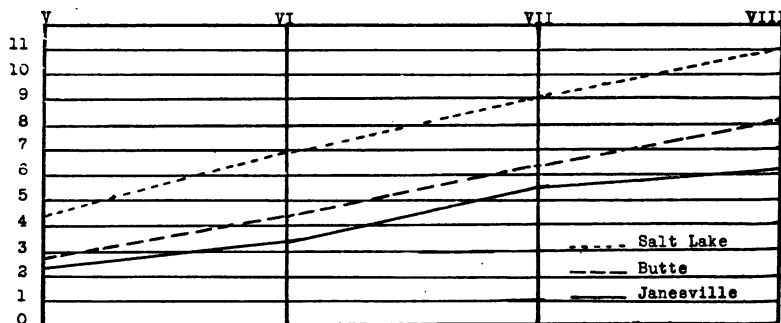


Figure IV Median Reasoning Scores in Janesville, Butte and Salt Lake

scores for the seventh and eighth grades should be lower than those of Salt Lake for grades six and seven. In the judgment of the survey staff this phase of the work in arithmetic is not well done in Janesville.

As to whether or not certain rooms do not do much better than others may be judged from the accompanying table. With few exceptions the results in the several classes for each grade are fairly uniform. No seventh or eighth grade class reaches the score of either Butte or Salt Lake for these grades, two exceed that of Butte in grade five. None reach that of Salt Lake. The score for grade six in building three includes two classes. In one all of the children entered the grade in January and in the other all had entered in September. The respective medians for the two classes are 3 and 4.6. The latter while a pure sixth exceeds but little the score for Butte which is made up of both A and B classes.

TABLE 52.—Median Scores by Buildings—Stone Reasoning Test

Buildings	Grades			
	V	VI	VII	VIII
1.....	0.8	3.6	4.8	7.3
2.....	2.1	3.1	5.6	5.6
3.....	2.5	3.6		
4.....	2.8	3.1	5.8	6.1
5.....			5.4	6.3
6.....	2.3		5.6	6.2
7.....	2.9			
Janesville.....	2.3	3.4	5.5	6.3
Salt Lake.....	4.3	6.9	9.1	11.
Butte.....	2.7	4.4	6.3	8.2

Progress From Grade to Grade

The amount of progress from grade to grade is small and a marked degree of overlapping is evident. This may be seen both from the table showing the distribution of reasoning scores and Fig. IV. Some children in every grade failed to solve a single problem correctly. 44% of the eighth grade pupils did not do as well as the best fifth grade pupil. The highest 25% of the fifth grade did better than a considerable proportion of the children in grades above. These fifth grade pupils made a higher score than 51.9% of the pupils in grade six. They did better than 11.4% of the seventh grade and better than 7.6% of the eighth grade.

The effect of instituting semiannual promotions upon the scores in the reasoning test may be judged from the table below.

The table gives the median scores for each group of two classes in each grade selected at random.

TABLE 53.—Median Stone Reasoning Scores by Promoted & Non-Promoted Sections

Medians	V		VI		VII		VIII	
	P.	N. P.	P.	N. P.	P.	N. P.	P.	N. P.
Class I.....	3.2	2.6	3.	4.6	6.3	5.8	6.3	6.
Class II.....	2.4	2.	3.8	3.6	4.9	4.7	5.8	6.4
Combined.....	2.6	2.4	3.2	4.	5.3	5.4	6.	6.2
No. pupils represented.....	29	19	31	52	26	37	24	37

In six of the eight cases the promoted pupils excelled the scores of those who had spent an entire year in the grade. In no case did the promoted groups score less than the group which remained in the grade below. The poor showing on the test cannot be explained by the peculiar condition existing from the introduction of semi-annual promotions.

One of the difficult tasks before the teachers and supervisors as revealed by the test on reasoning problems is to secure improvement in this important phase of arithmetic. Some of the suggestions made for the improvement of the work in the fundamental operations can be applied here as well. As stated in the chapter on Instruction children should be trained to read problems for the thought of the statements and conditions. At times it may even be advisable to use the arithmetic text as a reader. Conditions should be visualized from matter of habit. Pupils will do this more readily when problems are such as come directly within their own experience, when they appeal to them as worth while, and when the answer appeals to them as worth knowing. It is not necessary that the same problems be solved by all.

Pupils should be habituated in the matter of forming quick mental estimates of the answers not only to the problem itself but to the various parts. They should be so taught that they will not be satisfied with answers that have not been checked. Elaborate written analysis should be employed judiciously. Frequent short tests of a single example or two for the purpose of analyzing teaching needs will serve to guide the teacher.

More careful study of the achievements of each child and less fretting over failures will do much to economize teaching efforts. As a stimulus to the teaching of arithmetic, plans for supervision might well include some experimental teaching by some of the school's most capable teachers to test the validity of different methods of teaching particular processes.

READING

Results in reading were tested by use of the Kansas Silent Reading Test. This test was chosen in preference to others that might have been used because of its simplicity. It is a test of the child's ability to grasp the thought of selected paragraphs as shown by his answers to questions on each paragraph. The time allowed for the test is five minutes. Each paragraph has an assigned value and the pupil's score is the combined value of the passages correctly interpreted in the time allotted.

While it may be desirable to test certain other phases of reading achievement in and of themselves such as pronunciation, expression, and rate of reading, it was decided to confine the testing of reading to the particular phase of the subject generally considered most important—the ability to get information from the printed page rapidly and accurately.

No matter how far a child may progress in school or later in life his success will depend in no small measure upon his ability to glean thought from the printed page. In the busy world of affairs most of our information comes to us from newspapers, magazines and books. In the immediate schoolroom environment of the child his success depends largely upon his ability to read with a clear understanding the thought of problems in arithmetic or the subject matter of history, geography, science and literature. Whether his pronunciation be accurate or his expression good, when put to the test is of minor importance for his own future progress. Unless he be trained in the manner indicated he will derive little pleasure in reading, either for entertainment or information and the quality of the reading matter which appeals to his tastes will scarcely be such as to contribute materially to his mental growth and equipment.

The nature of the test used may be seen from the following representing a portion of the test for grades III, IV and V.

Value
2.6**No. 8.**

Here are two squares. Draw a line from the upper left-hand corner of the small square to the lower right-hand corner of the large square.

Value
3.0**No. 9.**

A farmer puts one-half the hay from his field into the first stack, then two-thirds of what is left into a second stack, and the remainder in a third stack. Which stack is the largest?

Value
3.9**No. 10.**

Below are two squares and a circle. If the circle is the largest of the three, put a cross in it. If one square is smaller than the circle, put a cross in the large square. If both squares are smaller than the circle, put a cross in the small square.

Value
4.0**No. 11.**

"The curfew tolls the knell of parting day,
The lowing herds wind slowly o'er the lea,
The ploughman homeward plods his weary way,
And leaves the world to darkness and to me."—(Gray)

Study the above quotation carefully. The author lets us know his feeling about the coming of night. If you think his feeling is one of fear and dread, underscore curfew. If his feeling is one of peace and gladness, underscore ploughman.

Value
4.0**No. 12.**

Read these carefully:
Bears are larger than bugs.
Houses are larger than bears.
Mountains are larger than houses.
Then bugs are not as large as mountains.

I have tried to make no false statement among these four. If I have succeeded, underline the word success. If I have failed, underline the word failure.

success

failure

There are three separate tests in the series. Test I is used in grades III, IV and V; Test II in grades VI, VII and VIII, and Test III in the high school. Each test is similar in nature to each of the others but somewhat more difficult. These tests have been given to over 100,000 children in other cities and the median or middle scores obtained by combining the results of all cities can be taken as standard performance.

The scores made in each grade for the city as a whole may be seen from the following table showing the distribution of reading scores. The table reads, e. g. in grade III there were twenty-three pupils who scored less than one. Twenty-three scored between 1—1.9, fifteen scored between 2—2.9, etc.

TABLE 54.—*Distribution of Scores in Kansas Silent Reading Test—Janesville*

Number pupils whose scores fall between	Grades									
	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0- .9.....	23	1	1							
1- 1.9.....	23	3	1							
2- 2.9.....	15		2	1						
3- 3.9.....	12	9	1		1		1	1		
4- 4.9.....	19	6	6	2		1				
5- 6.9.....	28	25	11	5	8	1	3	1		
7- 8.9.....	28	35	16	17	6	3	3			
9-10.9.....	9	34	21	15	9	4	7	2	1	1
11-12.9.....	7	23	20	18	13	10	11	4	4	
13-14.9.....	9	15	29	20	23	12	10	3	4	3
15-17.9.....	6	13	21	22	20	26	28	20	7	5
18-20.9.....	1	1	6	20	18	13	27	15	6	10
21-23.9.....		1	3	10	13	25	20	12	9	3
24-26.9.....			1	9	12	19	32	17	14	14
27-29.9.....			1	5	4	8	16	10	11	6
30-34.9.....				6	10	9	25	21	19	13
35-39.9.....					2	1	6	6	4	3
40-44.9.....							7	4	7	5
45-49.9.....								2	1	
50-59.9.....								3	5	2
60-69.9.....									1	
70-79.9.....							1			
Above 80.....							2	1	1	1
Total.....	180	166	140	150	139	132	199	122	94	66
Janesville Median.....	4.9	9.2	12.1	19.7	16.5	20.1	22.4	24.4	27.6	26.4
Standard Median.....	5.3	9.5	13.2	13.9	16.2	19.2	22.7	24.7	26.1	28.3

Certain facts with reference to reading ability may be noted from this table: (1) The scores indicate first of all a wide range of ability within each grade. In the third grade there were some children who did not interpret a single sentence correctly, and others who scored as high as 18 or better. (2) They

indicate that there are some children in the fourth and fifth grades who did no better on the same test than some of the children in grade three. Indeed, few children in those two grades did better than the best third grade children. Nineteen in the fourth and eleven in the fifth grades did no better than the median or middle score of the third grade. This overlapping of abilities is likewise evident in the three upper elementary grades in which test II was given. (3) A third point indicated by the table is seen when we compare the median scores with the standard median. From this standpoint it will be noted that the children in the ^{sixth} seventh and eighth grades and the eleventh grade of the high school read better than the standard representing the median scores of 100,000 children selected from many states. The children of the remaining grades do not read as well as children in other states.

That several of the grades did not do as well as they should is due in part to several causes: The recent introduction of semi-annual promotions, the scarcity of suitable reading matter, and mediocre teaching of reading. Each of these factors is treated elsewhere in this report. It may be said here, however, that the teachers will need to devote careful thought to ways of securing good work in silent reading. A discussion of methods of securing improvement in thought reading might well be made the subject of discussion at teachers' meetings.

(4) A more striking result than any so far indicated is the variation between schools. The table following indicates the median scores attained by the several elementary grades of each school. Median scores exclusive of the model department of the Jefferson school, which has but few pupils in any grade, vary by grades as follows:

TABLE 55.

	III	IV	V	VI	VII	VIII
Highest.....	8	10.7	14.5	15.6	19.5	24.8
Lowest.....	1.3	7.4	9.5	11.8	14.	18.
Standard.....	5.3	9.5	13.2	13.9	16.2	19.2

TABLE 56.—Median Scores in Kansas Silent Reading Test

Building	III	IV	V	VI	VII	VIII
1.....	4.3	8.8	10	15.6	16.5	18.5
2.....	6.7	10.7				
3.....			13.2	14.8	19.	24.8
4.....	1.3	8.7	14.5	13.7		
5.....	8.	10.				
6.....	7.7	9.9	14.1	15.	16.1	18.8
7.....	4.1	9.8			14.	18.
8.....	3.6	7.4	9.5		19.5	21.9
9.....			9.8			
Janesville Median	4.9	9.2	12.1	15.7	16.5	20.1
Standard Median.	5.3	9.5	13.2	15.9	16.2	19.2

It is evident that some of the classes in every grade can read better than the standard expected and it is also evident that there are some classes in nearly every grade whose work is much below the standard. The achievements of those making the highest scores might well serve as a mark worthy of emulation for those who did not do as well. It is also noteworthy that not more than one of the best median performances is to be found in any one building. Why exceptionally good reading and unusually poor reading are to be found in the same building is a matter demanding supervisory attention.

At this point some reference should be made to the scores made by the pupils who were promoted at the beginning of the present semester. These pupils it will be remembered had spent only one semester, except for those who had failed of promotion the preceding June, in the grade below. A tabulation of the median scores made by classes selected at random from those promoted and those who remained in the grade is given below.

TABLE 57.—Median Reading Scores by Promoted & Nonpromoted Sections

Medians	III		IV		V		VI		VII		VIII	
	P	N.P.	P	N.P.	P	N.P.	P	N.P.	P	N.P.	P	N.P.
Class 1.....	4.5	4.3	8.7	6.7	14	14.2	14.6	18.8	21.	21.	19.5	17.8
" 2.....	7.	7.5	6.	10.	9.5	11	10.3	16	16.1	16.5	16.5	21.4
" 3.....							15.5				2.8	21.1
Combined	5.3	4.9	8.	7.7	11.	13.3	13.	15.9	17.4	18.	18.	20.3
No. pupils represented.....	19.	37.	15.	28.	28.	30.	42.	71.	31.	32.	34.	53.
Standard.....	5.3		9.5		13.2		13.9		16.2		19.2	

The standard score is given by way of comparison. It should be noted that the standard score represents a combination of the scores of pupils who have been in the grade one and two semesters respectively. The children who were not promoted in January and who were thus well along in the second semester's work for the grade should exceed the standard.

Suggestions for Improving Work in Reading

For suggested changes in method and selection of reading material the reader is referred to the section on reading in the chapter of this report devoted to Instruction. Practice in rapid silent reading, motivation of the work in reading through such means as dramatization, reading for the entertainment or information of other members of the class, and discussion of the most interesting sections of the reading lesson, systematic training in getting the thought accurately and a sufficient supply of supplementary reading material will do much to bring about improvement.

The results of the test in reading indicate a positive correlation between the amount of subject matter read during the year and the scores made on the tests. In the main the classes which read more books did better than those that did not read as many. As suggested in the chapter on Instruction the board should take immediate steps to provide a sufficient supply of interesting supplementary reading material. The first requisite to good reading is interesting material. Too much time is devoted at present to material that does not appeal directly to the child's interests.

Training in the ability to gain thought from the printed page as stated elsewhere is a vital aim in all reading work. Training to this end should include the frequent choice of well selected paragraphs for practice work in rapid and accurate thought getting. Questions may be placed upon the blackboard and the children be given a limited amount of time to read the paragraphs and write the answers to the questions. Mimeographed sheets containing selected paragraphs and questions for practice work in particular grades on certain days might well be sent out from the superintendent's office. To ask the meanings of words as teachers frequently do is not sufficient. Children require practice in independent interpretation if they

are to acquire the facility in thought getting necessary to read rapidly and understandingly the kind and amount of material which today forms our greatest means of communication.

SPELLING

The achievements of the schools in the subject of spelling were tested by use of both the Ayres and Buckingham tests. The Ayres test included four groups of 25 words each of approximately equal difficulty selected from Dr. Ayres' list of the 1000 words most commonly used. The four lists included one for grade two, a second for grades three and four, another for grades five and six, and a fourth for grades seven and eight. These words were pronounced by the teachers. Teachers were instructed to illustrate the use of each word with a sentence. The words are given below.

The Ayres Words

Grades

2	3 & 4	5 & 6	7 & 8
nine	cash ¹	sometimes	meant
miss	warm	engage	earliest
tree	clothing	terrible	distinguish
got	able	period	consideration
white	suit	employ	assure
foot	watch	select	probably
block	fell	firm	foreign
river	buy	convict	responsible
cut	walk	command	beginning
winter	soap	crowd	difficulty
free	small	publish	finally
page	summer	term	develop
end	express	relative	issue
feet	lesson	entire	material
back	father	measure	mere
paper	table	serve	senate
each	talk	remember	respectfully
came	right	effort	agreement
show	road	due	unfortunate
yet	next	running	majority
give	four	position	elaborate
letter	power	ledge	citizen
after	because	primary	necessary
thing	country	Saturday	divide
than	another	information	receive

The Buckingham test was given in the form of dictated sentences. The test covered 50 words in grade two, 60 in grades three and four, 65 in grades five and six and 65 in grades seven and eight.

¹This word should have been "catch."

THE RESULTS ON THE AYRES TEST

The Average Scores

The results in spelling on the Ayres test are not satisfactory. When the average for the words used in each grade is compared with the average for 84 cities, we find that Janesville does not attain an average standing in any grade.¹

TABLE 58

	II	III	IV	V	VI	VII	VIII
Average of 84 cities.....	73	73	88	73	84	73	84
Janesville's average.....	42.9	66.9	82.1	56.3	74.9	62.6	71.1

The weakness of certain grades is evident. Grades six and eight were tested on the same lists of words that were used for children one grade lower in each case. It is to be noted that the eighth does not reach the standard for grade seven. Grade six is only slightly above the standard for grade five. The showings made by the second and fifth grades are unusually poor. The most satisfactory showing is made in grades three and four. When compared with other cities in Wisconsin the

TABLE 59.—Average Ayres Spelling Scores in Twelve Wisconsin Cities

Wisconsin cities	Date tested	Section tested	II	III	IV	V	VI	VII	VIII	Number children tested
1.....	10/ 3/16	R	.....	38.5	68.4	46.4	75.4	62.5	69.6	529
2.....	2/ 5/17	A & B	.....	61.1	79.3	49	66.3	60.9	75.9	1,868
3.....	10/25/16	B	.....	28.9	50.2	29.5	76.1	72.1	72.4	195
4.....	12/ 8/16	B	.....	49.8	77.8	57.3	69.8	57.3	62.6	439
5.....	9/28/16	B	.....	38.9	74.5	46.8	70.6	50.6	78.9	248
6.....	10/20/16	B	.....	42.3	61	57.3	64.8	50.7	56.2	470
7.....	10/25/16	B	.....	68.8	76.1	54.5	69.7	65	81.4	211
8.....	10/26/16	B	.....	51.1	74.2	54.9	77	61.9	70.9	248
9.....	1/ 2/17	B	.....	41.8	75.2	54.6	71.3	60.6	80.9	2,075
10.....	10/ 8/16	A	.....	46.8	68.8	59	74.2	40.7	72.2	201
11.....	10/20/16	B	.....	28.1	71.1	54.3	70.2	66.3	64.4	386
12.....	12/ 8/16	B	.....	58.6	78.5	47.6	74.2	52.6	64.7	307
Janesville.....	3/29/17	A & B	42.9	66.9	82.1	56.3	74.9	62.6	71.1	1,087

¹ Ayres' standard averages are based upon scores made by "children who had completed just half of the work of each grade." Approximately one-third of the children in Janesville were promoted in January. Since the test was given during the last week of March this third of the children had completed approximately one-fourth of the work of the grade while the remaining two-thirds had completed three-fourths of the work of the grade. On the average then the children in Janesville had completed slightly more than half of the work of the grade at the time the test was given, and valid comparisons may therefore be made.

results are not as poor in comparison. This is a reflection on teaching of spelling in Wisconsin rather than a cause for elation in Janesville.

The Variation of Spelling Achievement Within Grades

Poor spellers and good spellers, when in the same class, prove a vexing problem to the teacher. Both are found in every grade in Janesville. This may be seen by dividing the children into three divisions according to the scores made on the test. The following table shows the number who made an average of 40% (i. e. 10 words) or less, those who did better than 40% but less than Ayres standard for 84 cities, and those who reached or exceeded Ayres standard. The expected average is 19 or more words correct in grades two, three, five and seven, 22 or more in grade four, and 21 or more in grades six and eight.

TABLE 60.—*The Number of Children Making an Average of 40% or Less, Those Between 40% and Ayres Standard, and Those Reaching or Exceeding Ayres Standard*

	II	III	IV	V	VI	VII	VIII
40% or less	74	34	10	46	16	23	11
Between 40% and Ayres Standard	37	72	67	48	75	69	74
Ayres Standard or better	43	77	97	41	70	51	49
Total children tested	154	183	174	138	161	143	134

The table serves to indicate the problem facing the teachers and supervisors in Janesville. There are many more in each grade except the fourth who fell below the expected standard than there are of those who reach or exceed it. Nearly half of the second, and a third of the fifth grade children did not spell more than 10 (i. e. 40%) of the 25 words correct. Yet in each of these two grades a considerable proportion of the children are at least average or better than average spellers. Grade four shows a large number of good spellers and only a small number of very poor ones. In grade eight there are some very poor spellers, a large number of mediocre ones, and an insufficient proportion of good ones. Grades two, five, seven, and

eight have a relatively small proportion of good spellers. To adapt the teaching of spelling to meet the needs of groups showing such different achievements as the three groups of the table represent, is a problem which should be squarely faced by teachers and supervisors.

To discover something as to the effect of instituting semi-annual promotions upon the scores in spelling, separate averages were computed for each group for three classes each of the second, fifth, and eighth grades selected at random. The average scores made by each are:

TABLE 61

II		V		VIII	
Promoted	Non-Promoted	Promoted	Non-Promoted	Promoted	Non-Promoted
32.3	65.	60.7	59.6	67.1	71.3

Undoubtedly the promoted children have had a marked effect upon the spelling results in the second grade. In the other grades its effect was not so marked.

THE RESULTS ON THE BUCKINGHAM TEST

Since the tests arranged by Dr. Buckingham have been so standardized that the percentage of the pupils in a given grade who should spell each of the words is known, the words used, together with the expected score and the Janesville score for each, are reproduced here.

TABLE 62.—Percentage of Children in The Second Grade Who Spelled Each of the Given Words Correctly

Words	Standard score	Janesville score	Words	Standard score	Janesville score
baby.....	72.5	48.7	near.....	50.0	28.4
an.....	61.4	41.6	great.....	83.4	22.1
egg.....	76.4	53.9	oak.....	87.4	21.4
dinner.....	48.4	32.5	tree.....	80.8	63.6
close.....	38.0	29.2	father.....	67.5	41.6
fasten.....	29.0	12.3	can.....	36.9	76.1
door.....	67.3	65.1	climb.....	25.4	14.3
city.....	44.0	29.9	very.....	59.8	31.2
mouse.....	38.1	24.7	high.....	48.7	22.7
oats.....	63.1	40.9	forgot.....	54.5	42.9
bread.....	51.8	28.6	name.....	54.5	39.6
cheese.....	30.3	23.4	street.....	49.4	35.7
girls.....	75.5	55.2	keep.....	52.3	20.1
play.....	83.2	68.2	cent.....	45.1	25.3
ice.....	79.1	61.1	earn.....	21.8	1.3
morning.....	51.4	35.1	here.....	51.7	39.6
train.....	42.5	25.3	nice.....	58.6	30.5
late.....	54.1	45.5	apple.....	75.9	55.8
mother.....	79.6	41.6	aunt.....	27.5	9.7
sits.....	60.3	47.4	white.....	52.4	46.1
low.....	56.1	29.2	cloud.....	38.1	33.8
chair.....	46.5	26.1	locks.....	61.3	42.2
sew.....	27.5	9.1	big.....	67.3	57.8
gentle.....	20.9	16.2	boat.....	52.9	33.8
horse.....	43.4	30.5			
stands.....	40.9	37.1			
			Average.....	52.6	35.8

TABLE 63.—Percentage of Children in the Third and Fourth Grades Who Spelled Each of the Given Words Correctly

Words	III		IV		Words	III		IV	
	Standard score	Janesville score	Standard score	Janesville score		Standard score	Janesville score	Standard score	Janesville score
pitcher.....	48.4	19.6	60.9	36.6	stream.....	54.9	39.1	78.7	60.1
half.....	68.4	57.1	88.5	75.4	reach.....	66.3	52.2	87.7	76.1
goose.....	61.1	53.8	85.7	62.3	great.....	69.9	51.6	87.7	74.3
searched.....	23.2	14.7	47.6	32.1	broad.....	53.6	34.8	71.8	53.7
food.....	83.9	78.8	95.9	93.1	sea.....	93.3	77.2	95.8	86.6
hang.....	72.3	50.5	89.8	81.7	brother.....	77.3	81.5	92.5	79.7
linen.....	39.9	15.2	63.2	36.6	wrote.....	49.7	29.4	71.8	51.4
curtain.....	35.7	9.8	58.8	34.9	cheerful.....	40.4	28.8	64.2	38.3
space.....	59.4	36.4	86.1	64.1	aunt.....	62.4	35.7	82.7	57.7
above.....	57.4	42.9	80.5	73.1	rich.....	78.3	71.2	92.5	85.7
stairs.....	61.3	43.5	80.5	65.7	lady.....	74.5	66.8	91.2	80.1
where.....	79.9	73.4	91.6	76.9	paid.....	47.1	31.1	65.8	50.9
queen.....	65.9	46.7	86.5	73.7	high.....	73.8	51.6	89.4	73.1
shining.....	48.1	25.5	55.5	40.1	price.....	68.9	47.8	86.6	69.8
bracelet.....	24.7	10.9	42.2	21.1	clothes.....	48.2	28.8	65.9	49.1
clo-e.....	77.1	52.2	90.6	70.1	tried.....	49.7	32.1	69.4	49.7
knife.....	68.1	48.4	82.4	66.9	walk.....	74.5	71.2	88.4	85.7
leave.....	54.2	25.1	79.5	47.4	crowd.....	30.4	28.8	50.1	34.3
wagon.....	62.1	59.8	84.3	73.7	color.....	58.2	34.8	71.8	57.1
bread.....	83.4	79.9	95.3	86.3	fancy.....	48.6	21.2	68.1	45.7
cheese.....	60.5	38.6	79.7	65.7	waist.....	35.7	25.1	64.7	42.3
breakfast.....	54.1	44.0	75.4	64.6	blue.....	75.2	67.4	89.8	86.3
eagle.....	42.9	42.4	74.2	69.1	climb.....	51.9	34.8	73.9	56.6
floated.....	38.7	23.4	60.7	36.6	pole.....	67.1	48.9	87.1	78.9
breeze.....	45.8	26.6	71.1	37.1	fasten.....	52.1	25.1	75.7	37.9
flour.....	58.1	38.1	76.9	63.4	rope.....	66.1	56.5	86.8	84.6
wheat.....	60.1	53.3	84.4	74.3	sew.....	53.4	23.9	71.2	45.7
noticed.....	27.6	13.6	56.1	27.4	earn.....	56.8	32.6	84.1	63.4
oar.....	32.2	9.8	55.8	19.4	living.....	50.9	31.5	72.9	55.4
canoe.....	27.3	14.1	55.1	17.7					
tiny.....	59.1	48.9	78.1	59.4	Average.....	56.7	40.9	76.5	59.3

TABLE 64.—Percentage of Children in the Fifth and Sixth Grades Who Spelled Each of the Given Words Correctly

Words	V		VI		Words	V		VI	
	Stand- ard score	Janes- ville Score	Stand- ard score	Janes- ville Score		Stand- ard score	Janes- ville Score	Stand- ard Score	Janes- ville Score
restrain ...	76.7	63.6	89.	77.4	noticed ...	69.5	51.7	80.6	63.6
grief.....	65.5	58.	76.3	73.6	debts.....	57.	39.2	74.3	61.6
double.....	72.9	66.4	82.9	72.3	continued.	60.8	50.3	77.6	64.8
echo.....	77.4	49.7	83.6	68.6	source.....	41.4	32.9	64.4	42.1
icicle.....	35.	17.5	43.3	31.5	trouble....	72.3	64.3	81.9	76.2
high.....	94.4	86.	95.	95.	repair.....	76.9	53.1	87.	70.4
leave.....	90.	77.7	95.	89.3	canvas.....	51.	54.5	63.5	71.1
oar.....	64.2	31.5	74.1	60.4	curtain....	71.4	63.6	81.7	74.2
canoe.....	77.	49.7	35.8	67.9	needle.....	75.2	62.2	84.7	71.1
aunt.....	88.2	73.4	92.8	80.5	thread.....	83.2	71.3	91.3	91.2
purchased.	49.1	21.	68.4	52.2	sew.....	73.	60.8	76.2	69.2
bracelet...	62.2	21.7	63.1	35.2	lining.....	64.2	58.	71.4	62.3
bargain...	61.6	46.2	75.3	57.9	sleeve.....	56.6	43.4	69.3	51.6
repeats...	78.3	62.2	86.2	74.8	holiday....	79.2	48.3	84.6	77.4
daily.....	87.7	78.4	92.3	88.7	approaches	37.4	18.2	49.8	24.5
promise....	74.3	49.	85.8	71.1	exercise...	55.5	28.	70.7	36.5
quiet.....	69.	49.7	71.1	71.1	breathe...	48.8	31.5	54.7	37.7
beggar.....	55.	35.	71.	53.5	season.....	91.	68.5	96.1	90.6
searched...	62.4	37.8	69.3	61.	oysters....	84.2	51.	90.7	74.2
village....	83.7	70.	88.4	81.1	course.....	66.6	51.7	76.4	62.3
clothes...	75.2	58.7	77.3	70.4	excuse.....	82.7	60.8	91.6	84.3
complete...	64.2	42.7	81.6	61.6	women.....	80.8	59.4	86.9	74.8
calm.....	55.6	28.7	73.6	54.1	paid.....	77.6	67.8	80.2	75.6
lying.....	71.8	59.4	82.3	67.3	cocoa.....	58.7	32.2	67.2	40.3
pitcher...	67.1	40.6	68.	56.	hominy....	22.	17.5	46.5	29.6
contains...	84.	70.	91.3	81.1	cheese.....	87.8	78.3	91.3	91.8
honey.....	88.4	72.	91.	86.8	celery.....	63.7	18.9	77.5	49.1
thumb.....	68.1	58.	75.2	72.3	behavior...	51.9	10.5	73.8	23.3
bruised...	41.	34.3	60.5	50.9	burglar....	51.1	33.6	52.1	51.6
rinsed.....	21.	20.3	23.1	23.8	truly.....	71.5	67.8	76.3	74.8
dried.....	62.	47.6	70.8	66.	dangerous	57.8	43.4	81.9	62.9
linen.....	80.5	64.3	87.8	77.4					
absence....	51.9	21.7	64.1	45.9	Average	66.7	49.1	76.4	64.
lawyer....	57.5	37.1	77.5	49.7					

TABLE 65.—Percentage of Children in the Seventh and Eighth Grades Who Spelled Each of the Given Words Correctly

Words	VII		VIII		Words	VII		VIII	
	Stand- ard score	Janes- ville score	Stand- ard score	Janes- ville score		Stand- ard score	Janes- ville score	Stand- ard score	Janes- ville score
secrecy	51.5	33.8	68.5	47.1	debt	88.3	78.9	94.9	90.4
wretch	67.5	59.2	82.9	61.	perceived	40.6	32.4	58.5	26.5
gallows	77.8	69.	88.7	72.8	responsible	61.1	53.5	78.8	58.8
treason	84.9	65.5	93.1	83.8	embarrassment	14.6	5.6	30.2	7.4
vehicle	62.4	38.7	76.6	52.9	musician	64.9	44.4	73.5	48.5
accommodate	39.9	16.2	47.9	14.7	rehearse	72.7	57.7	79.5	65.4
vallise	51.7	33.8	70.1	41.9	celer	81.4	65.5	88.9	75.7
scenery	73.3	59.9	85.7	68.4	morsel	65.3	45.1	67.4	40.4
enthusiasm	40.1	11.3	68.9	27.9	confectionery	48.6	16.2	52.9	5.9
yacht	62.	33.1	75.1	48.5	purchased	79.2	65.5	86.7	84.6
vaguely	27.5	28.9	48.3	50.	souvenir	13.	3.5	22.2	.7
discernible	5.3	5.6	13.9	5.2	behavior	79.9	47.9	82.7	47.8
recipe	37.2	29.6	50.1	34.6	resemblance	50.5	32.4	61.3	43.4
marmalade	42.8	43.7	54.1	44.1	treachery	53.	47.2	65.7	55.9
accuracy	45.4	35.2	67.4	39.	promise	92.7	84.5	95.7	69.1
apparent	60.8	44.4	77.1	57.4	release	83.2	65.5	88.2	70.6
science	56.3	35.2	79.3	50.	sage	63.3	31.	60.8	44.9
beneficial	48.	23.9	64.2	25.	biscuits	69.4	52.1	76.9	64.
discoveries	70.7	51.4	84.3	58.8	restaurant	45.5	16.2	53.	12.5
sacrifice	56.6	33.7	69.2	46.3	digestible	40.1	18.3	46.1	37.5
endeavor	43.4	35.9	54.6	41.9	surgeon	35	41.5	65.9	56.6
eliminate	38.5	24.6	55.2	39.7	appendicitis	12.5	12.7	35.3	14.7
distillery	53.6	41.5	65.	45.6	dispensary	19.6	11.3	39.8	11.
vicinity	59.9	42.3	75.7	54.4	interfere	63.8	56.3	74.4	65.4
solemn	57.8	47.2	70.7	46.3	wrestle	73.6	71.8	75.3	68.4
reverence	69.1	52.1	77.7	62.5	discipline	30.5	29.6	47.8	53.7
reign	70.	56.3	87.4	62.5	dissenstion	4.2	1.4	5.8	2.2
hair	67.9	47.9	87.5	71.3	investigation	73.4	62.7	84.8	68.4
achieve	72.3	48.6	81.9	55.1	reveal	82.3	64.8	88.8	79.4
persevere	52.5	41.5	70.6	49.3	desirable	57.5	33.1	70.4	55.9
tortoise	33.9	31.7	60.4	26.5	resources	56.1	50.7	65.4	43.4
reslan	85.1	77.5	93.8	88.2					
volunteer	61.3	39.4	74.	49.3					
mortgage	31.3	32.4	70.5	45.6	Average	55.0	41.2	67.7	48.3

The achievement of the children may be seen more strikingly by summarizing the facts in table form. The table following indicates the number of words in the tests for each grade, the number of words on which Janesville children exceeded the expected average and the number on which they did not do as well.

TABLE 66

	II	III	IV	V	VI	VII	VIII
Number of words in test.....	50	60	60	65	65	65	65
No. on which Janesville children equalled or exceeded standard.....	0	1	0	1	4	6	2
No. on which Janesville children are below standard.....	50	59	60	64	61	59	63

This is indeed a severe indictment of the work in spelling.

The 65-word test used in grades seven and eight was likewise given to the high school. The median number of words correctly spelled for each high school grade and for grades seven and eight are given below.

TABLE 67

	VII	VIII	IX	X	XI	XII
Median score.....	25.2	33.2	40.6	47.7	51.2	52.2

This indicates some progress from the grammar grades to the high school even though spelling is not a regular high school subject. There are pupils in every grade including the 12th, however, who do not exceed the median 33.2 attained by the eighth grade.

The Words Which Children Spell

A part of the responsibility for the poor results in spelling undoubtedly may be attributed to the lack of a course of study. The teachers have realized this disadvantage and for the past year have been engaged in the preparation of new courses. The tentative outlines indicate a wholesome desire to take advantage of the more recent studies of Ayres, Jones and others on the words in common use and words commonly misspelled. They will need to be cautious however, in not making the lists of words to be studied too narrow.

Among the questions asked with reference to the work in spelling was one asking for the proportion of words derived from each of the various sources. The proportion of words taken from the readers ranges from none at all to 90%. This certainly represents extremes in practice. The motives for so doing should be carefully examined by supervisors. One-half of the 36 teachers reporting select 50 or more per cent of the spelling words from readers. Teachers who are accustomed to selecting such large proportions of the words from reading texts will profit by a careful study of the actual needs of the children as indicated by their writing and speaking vocabularies. Twelve teachers report one-half or more as selected from spelling texts. It is clear that reading and spelling texts

serve as the course of study in spelling and that the spelling needs of the children are not necessarily considered.

It is bad practice to select a large number of the words for spelling from the reading text. The words used in the language of the readers are not those in which the child does his thinking and which he needs to know how to spell. In fact the reading vocabulary is often considered as about two years or more in advance of the spelling vocabulary. Too often the words of the reader are those used by adults. The language of the child is relatively simple and consists of relatively common and simple words.

Slavish adherence to the spelling text may be a contributing factor to poor spelling results in some cases. Most spelling texts like reading texts contain many words which children will rarely be called upon to spell. Words when taken from spellers must be such as are most commonly used and which children need to be taught how to spell.

The teachers will do well to continue their examinations of the more recent studies of spelling vocabularies. In addition to those of Jones and Ayres, the works of Buckingham, Pryor, Cook and O'Shea, Eldridge, Chancellor and others should be consulted. Perhaps no more fruitful work could be undertaken by the teachers with reference to the course in spelling than to make a tabulation of the words which Janesville children use in their written and spoken English. When the results of the individual tabulations made by each teacher have been brought together into a single list it will be well to compare them with several of the spelling studies referred to above for additions which it may appear wise to make.

In order to meet more nearly the needs of the individual children the teachers should adopt the practice of having each child keep an individual spelling list made up of words which he misspells. These are the words for the learning of which he has a motive. Each child should be systematically drilled upon his own list. A further discussion of the subject of the words spelled and of a number of the topics treated in the remaining pages of this chapter will be found in the chapter on Instruction.

The Time Devoted to Spelling

The cause of poor spelling is not to be found in the time devoted to the subject. In grade two the time ranges from 50 to 100 minutes per week. The highest average score made by any second grade 73.2 per cent was made by a class which devotes 50 minutes per week to spelling and a class of which one-third of the pupils entered in January. Another class which devotes 100 minutes to the subject contains only pupils who entered the grade in September. This class made an average of only 52.5 per cent. In the sixth grade the lowest score is made in a school which gives 100 minutes per week to spelling and the highest by one that gives only 75. In general it may be said that time and results bear little relation in spelling. A large amount of time devoted to the subject is no assurance of success. The time devoted to spelling in Janesville is not excessive. More than one-half of the rooms tested reported 75 minutes as the time given per week. This is a sufficient amount for securing good results if the subject is well taught.

Organization of the Teaching

When very good and very poor spellers are found in the same classes as they are in Janesville it is poor economy to assign the same spelling lesson and the same number of minutes for study to every pupil in the class. For this purpose it will be well to discover whether children already know some of the words in the day's lesson before they are assigned. Words which children know may well be omitted for those children and the time devoted to other words or other subjects. Wherever feasible within a building the daily program may be so arranged as to permit all of the spelling to come at the same period of the day. Children may then take spelling in some grade other than their own and where the spelling taught is more nearly at their level of ability. Under this form of arrangement children would not be retained an additional year in any grade because of poor spelling ability.

The number of *new* words taught per week should receive immediate supervisory attention. Good practice recommends two new words daily. This will permit of the direct teaching of approximately 2500 words during the elementary school course. The median number of new words taught per week in Janesville at present is somewhat more than 20 or double the number recom-

mended. It ranges from 5 in one third grade to 60 in one of the seventh grade classes. Three rooms teach 10 words per week and all others teach more. *Poor results and a large number of words seem to go hand in hand.* More attention should be devoted to teaching well the words that are taught, and to a careful selection of words to be taught.

Teaching the Children to Spell

Some children are by nature capable of learning with little effort. Others will make good spellers only with great effort. Each teacher should attempt to diagnose the spelling ability of each individual in the class early in the year.

Not all words require an equal effort for mastery. The studies particularly of Dr. Buckingham and others have proved this beyond question. Differences in the difficulty of the words used in the Buckingham tests for each grade may be noted from the differences in the standard expected. The results of such studies should be made available for the teachers by the central office, in order that they may have some idea of the teaching effort required for different words.

In teaching new words care should be exercised to associate each word with the child's past experience so that it will have meaning to him and become a part of his thinking vocabulary. To illustrate—the word “parade” as it occurs in the text may mean little until associated with circus; “salary” may have no significance until associated with an elder brother. When a word is associated with some of the child's own experiences and when he sees that it will help him to express some of his own ideas more clearly and forcefully he has an impelling reason for learning how to spell that word. Some children will learn more readily through the eye and others through the ear. Some will learn to spell a word by pronouncing it, and others are aided by tracing the letters or writing the word. It is well to make use of all of these means. Words may be learned more readily if the child acquires the habit of looking at a word intently for a brief period then looking away and attempting to picture it mentally. Children should be taught to analyze a word into parts as habitually as they do the steps in a problem in arithmetic to discover the peculiar combinations of letters or syllables that offer a difficulty.

A systematic plan for reviewing words taught in previous lessons should be developed. Words taught today should be re-

viewed tomorrow, again next week and a third or even fourth time a month or several months later.

Each child should keep a record of his own performances in spelling whereby he may note how his own record improves and how it compares with the average for his grade, whether he is above the average of a grade higher or below, that of a grade lower.

WRITING

Results in writing were measured for both quality and speed. Pupils were asked to write on unruled paper the series of words "One, two, three" etc., as far as they could go in the time allowed. In grades lower than the fourth they were asked to write this series of words to "four" and then to repeat as often as time permitted. Pupils were instructed to write well. Two minutes were given for the test. The papers were scored by advanced students of the Rock County Training School, without knowledge of the particular grade to which any paper belonged. Scoring papers for speed required merely a computing of the number of letters written per minute. In the scoring for quality the Thorndike Handwriting Scale was used. Some time was devoted to preliminary practice in the use of the scale by rating writing samples of standardized value. This was done under the direction of a member of the survey staff.

The Quality of Handwriting

The distribution of the scores for quality of handwriting may be seen from the table below.

TABLE 68.—*Distribution of Scores for Quality of Handwriting—Thorndike Scale*

Quality	II	III	IV	V	VI	VII	VIII
4.....	4	1					
5.....	15	9		1		1	
6.....	26	25	10	2			
7.....	42	40	20	7	3	2	1
8.....	33	43	32	29	19	9	4
9.....	17	45	56	48	52	44	27
10.....	7	5	26	18	18	23	17
11.....	13	5	20	19	33	44	35
12.....		1	3	9	15	10	26
13.....	1		1	4	8	8	12
14.....					1	1	8
15.....							1
16.....							2
Total.....	158	174	168	137	149	142	133
Median	7.3	7.8	8.9	9.1	9.5	10.2	11

Rated
at

- 4 One two three
- 5 One two three four five
- 6 One two three four
- 7 One two three four
- 8 One two three four
- 9 one two three four five six seven
twelve fourteen fifteen sixteen
- 10 one two three four five six seven
eleven twelve thirteen fourteen
- 11 one two three four five six seven
one two three four five six seven
- 12 two three four five six
- 13 eight nine ten eleven
- 14 Then the carelessly dressed gentl.
- 15 two three four five six
- 16 Then the carelessly dressed gen

Fig. V Specimens of Each Quality of Handwriting

Variations in Quality

The Thorndike scale consists of a series of samples ranging from one which is scarcely legible as handwriting to one which is near perfect. The poorest is valued at 4 and the best at 18. Each step improves in quality by an approximately equal amount. From the distribution table above it will be seen that poor writers and good writers were found in every grade. Any piece of writing which scores less than quality nine on the Thorndike Scale is read with difficulty. On the other hand children who write a hand better than quality twelve may be regarded as fairly good writers. Some idea of the quality which the different steps of the scale represent may be gained from Figure V. In this figure the specimens of handwriting are arranged in order of merit from 4 to 16 as judged by the scorers. With the exception of the sample rated as 14 and the sample rated as 16 which are taken from the Thorndike scale itself, the specimens represent writing produced by Janesville children.

The proportion of poor writers as may be seen by reference to the distribution table of scores is large while the proportion of unusually good writers (i. e. those who write as well as quality 15 or better) is very small. Only three children attain this degree of merit. The writing of many of the children in every grade is unsatisfactory. From a teaching standpoint some of the problems to be faced are: What shall be done for the children in upper grades who write no better than many of the children in the second or third grade? How much writing shall be required of children in the second, third and fourth grades who already write as well or better than the median eighth grade child? How can instruction in writing be made to fit the needs of children in the same grade where writing ability ranges from that which is scarcely legible to that which approaches nearly perfect penmanship?

The Median Achievements in Quality

The median score in each grade together with similar figures from cities of Wisconsin and elsewhere may be seen from the table following. The figures for other Wisconsin cities were obtained from tests given under the same uniform directions as were observed in Janesville. The median scores for Janesville indicate improvement from grade to grade. They indi-

cate that in the quality of handwriting the children write about as well as average children in Wisconsin. Teachers should not however, be satisfied with average writing. Present writing averages in Wisconsin are mediocre and are not commensurate with the time devoted to the subject.

TABLE 69.—Median Scores in Quality of Handwriting for Wisconsin and Other Cities—Thorndike Scale

Date Tested	Wisconsin Cities	II	III	IV	V	VI	VII	VIII
9-28-16	1.....				9.4	9.3		
10-9-16	2.....		7.6	8.9	9.2	9.5	10.9	10.8
10-23-16	3.....		8.6	9.2	9.2	9.4	11.3	8.8
12-5-16	4.....		8.2	8.6	7.9	8.8	9.2	9.8
12-8-16	5.....		8.8	9.	8.9	10.3	10.	9.7
3-8-17	6.....	8.3	8.6	9.2	9.3	10.5	10.7	12.1
4-10-17	7.....	8.	7.7	8.1	8.7	9.1	11.2	9.4
4-12-17	8.....	6.8	8.5	8.8	8.	8.9	8.9	12.
5-10-17	9.....		7.8	8.4	9.4	8.7	9.4	
Average		7.7	8.2	8.8	8.9	9.4	10.2	10.4
3-23-17	Janesville.....	7.3	7.8	8.9	9.1	9.5	10.2	11.
June....	Butte.....	8.2	8.0	8.8	8.9	11.6	11.2	12.1
Sept....	Des Moines.....		7.3	8.1	8.4	8.9	9.5	10.
June....	Salt Lake.....	9.3	10.7	10.9	11.2	12.1	12.1	13.1
	Starch's standard..	7.5	8.2	8.7	9.3	9.3	10.4	10.9
	(1) Freeman's stand- ard.....	8.2	8.8	9.6	10.1	11.	11.7	12.1
	(1) Iowa.....	8.3	8.8	9.4	10.	10.4	11.	11.5

(1) Converted from Ayres to Thorndike units by Kelly's method of equating the two scales. "Each Thorndike unit equals 7.9 as great a distance as an Ayres unit".

Janesville children on the whole do not write as well as the children in other cities from which comparative data were obtained. The Iowa scores represent rural, village, and city children and are not too high to be reached by any city in which writing is well taught. Freeman's standard representing the better half of 56 cities is a mark that any good school may well strive to attain, and which the teachers of Janesville should set out to reach in the immediate future. What may be accomplished where a city really does well in writing may be seen by reference to the scores for Salt Lake.

The quality of handwriting in Janesville as compared with the average of Wisconsin cities, the Iowa scores and Freeman's standard are represented graphically in Fig VI.

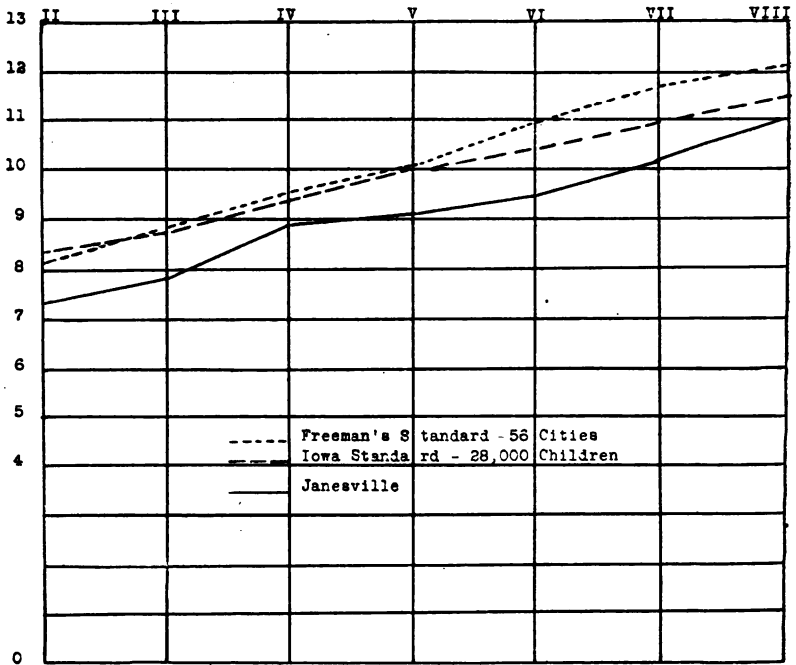


Fig. VI. The Quality of Handwriting in Janesville Compared with the Freeman and Iowa Standards

Good teaching in penmanship is more essential than time. This may be made plain from the scores made in a number of rooms. In the Webster building 150 minutes per week are devoted to writing in the first grade and 100 in the second. In the Adams and Jefferson the time is 75 minutes for each grade. The median second grade score for the Webster is much below that of the Jefferson. The question is where are the results which account for the extra 50 minutes per week.

TABLE 70

	Webster	Adams	Jefferson
Av. time for writing per week first two years..	125	75	75
Median second grade score.....	7.35	6.9	9.1

A child who passed through the entire eight grades in the Adams school would devote on an average about 10 minutes more time per week to writing each year than if he passed through the same grades in the Jefferson building. Yet in six of the eight grades the children in the Jefferson excell those in the Adams.

Median Quality Scores Measured by the Ayres Scale

In view of the fact that some of the teachers in Janesville are using the Ayres scale in the classroom and in order that results may be compared with other schools which are doing so, the writing scores as determined by the Thorndike scale have also been converted to Ayres units. The median scores for Janesville and other cities may be seen from the table following:

TABLE 71.—Median Scores in Quality of Handwriting (Ayres Scale)

	II	III	IV	V	VI	VII	VIII
Iowa (28,000 children)	35.7	39.8	44.5	49.1	52.3	57.	61.
Denver		26.	31.	38.	43.	51.	57.
Cleveland				45.	48.	50.	55.
Grand Rapids	29.4	34.5	44.4	51.7	58.3	61.4	68.4
St. Louis	29.9	31.7	36.8	52.1	57.3	62.8	74.2
Freeman's Standard (56 cities) ..	35.	39.3	45.6	50.1	56.6	62.3	65.8
Janesville*	27.7	31.6	40.3	41.9	45.1	50.7	56.9

*Converted from Thorndike to Ayres units by Kelly's method, in which each Thorndike unit is considered as equal to 7.9 as great a distance as an Ayres unit.

THIRTEEN

Variation in Speed

In the table showing the distribution of writing scores according to speed pupils' scores have been recorded according to the number of letters written per minute. Slow writers and rapid writers are found in each grade. There are some children in every grade who write more than three times as fast as others in the same grade. The proportion of slow writers in the lower grades is unusually large. Some pupils evidently develop a slow habit early in their school life and they continue to be slow writers throughout their course. A glance at the table showing the distribution according to speed reveals children in grades six, seven, and eight who do not write half as rapidly as the most rapid writers several grades lower. Teachers should attempt to develop early the habit of writing at a fair rate of speed.

TABLE 72.—*Distribution of Scores for Speed of Handwriting*

Speed in letters per minute	II	III	IV	V	VI	VII	VIII
0-10.....	6	1					
11-20.....	27	7	1	1	2	1	
21-30.....	58	22	10	5	6	1	1
31-40.....	37	40	33	20	14	2	1
41-50.....	23	37	28	28	19	7	3
51-60.....	2	39	53	36	47	18	14
61-70.....	1	12	18	16	34	25	19
71-80.....	3	8	15	20	22	34	31
81-90.....	1	6	7	6	4	26	28
91-100.....			1	3	1	14	26
101-110.....			1	1		8	8
111-120.....		1				4	1
121-130.....				1		2	1
131-140.....		1					
141-150.....							
151-160.....			1				
Total.....	158	174	168	137	149	142	133
Median ⁽¹⁾	26.1	45.5	56.3	56.5	56.6	75.6	77.5

(¹) Medians were computed from a more detailed distribution than that shown above.

The Median Scores in Speed

The median scores for speed of handwriting are marked by a large increase from grade two to grade three. There is no appreciable improvement from grade four to grade six. The seventh grade makes a creditable showing in improvement over grade six. How Janesville children compare with children elsewhere in speed of their handwriting may be seen in the table following:

TABLE 73.—*Median Scores in Speed of Handwriting*

	II	III	IV	V	VI	VII	VIII
Janesville.....	26.1	45.5	56.3	56.5	56.6	75.6	77.5
Iowa (28,000 children).....	39.2	49.6	61.9	65.5	72.6	75.	76.5
Cleveland.....				60.	70.	78.	80.
Denver.....		36.	50.	54.	63.	66.	69.
Grand Rapids.....	33.5	50.1	59.3	64.9	73.	77.9	84.3
St. Louis.....	31.	57.	64.	66.	70.	75.	73.
Starch's standard.....	31.	38.	47.	57.	65.	75.	83.
Freeman's standard (56 cities).....	36.	48.	56.	65.	72.	80.	90.

Compared with these cities Janesville children are about average performers in grades three, four, seven and eight, but they do not write as rapidly as children elsewhere in the second,

fifth and sixth grades. The low rate of writing in these grades can scarcely be attributed to anything else than a lack of emphasis on speed by teachers in these grades.

The scores made by Janesville children may be compared graphically with those made by children in Iowa and in the better half of the 56 cities tested by Professor Freeman in the figure following.

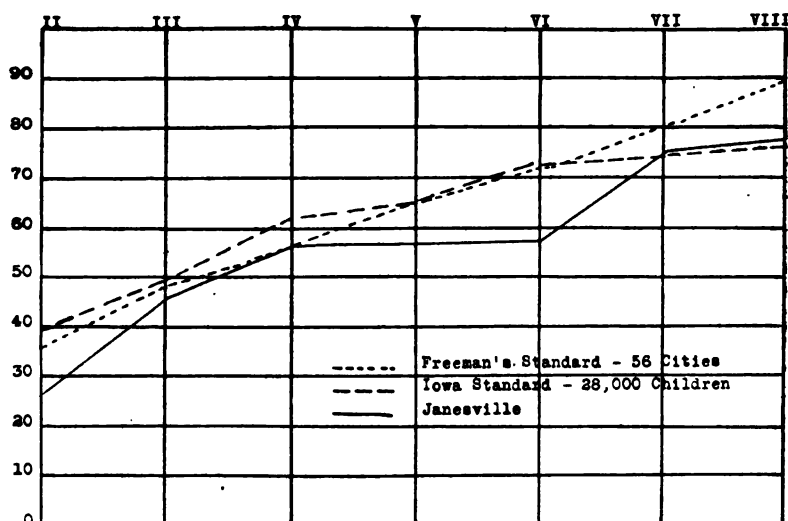


Fig. VII The Speed of Handwriting in Janesville Compared with Freeman and Iowa Standards

Speed and Quality in Janesville as Compared with Freeman's Standard

In Figure VIII the results for both speed and quality have been represented upon a single graph. Speed is represented horizontally and quality vertically. The small numbers at intervals along the curve indicate the location of each of the respective grades. For example beginning with grade two the position of Janesville is located at quality 7.3 and speed at 26.1. The Freeman standard is 8.2 for quality and 36.6 for speed in the same grade. The amount which any given Janesville grade falls below the standard in speed is represented by the length of the small dotted horizontal line bearing the number of the grade. The similar dotted vertical line indicates the amount which a grade falls below the Freeman Standard in quality. From this it will be noted that grades two, five,

six and eight are the most serious offenders in speed. In point of quality grades three, five, six, seven and eight are farthest from the standard established by Professor Freeman. Taking speed and accuracy together grades six, and eight are seen to be notably weak in both. The sixth grade has attained nearly fourth grade standard in quality and in speed. The eighth has not quite reached sixth grade quality and seventh grade speed.

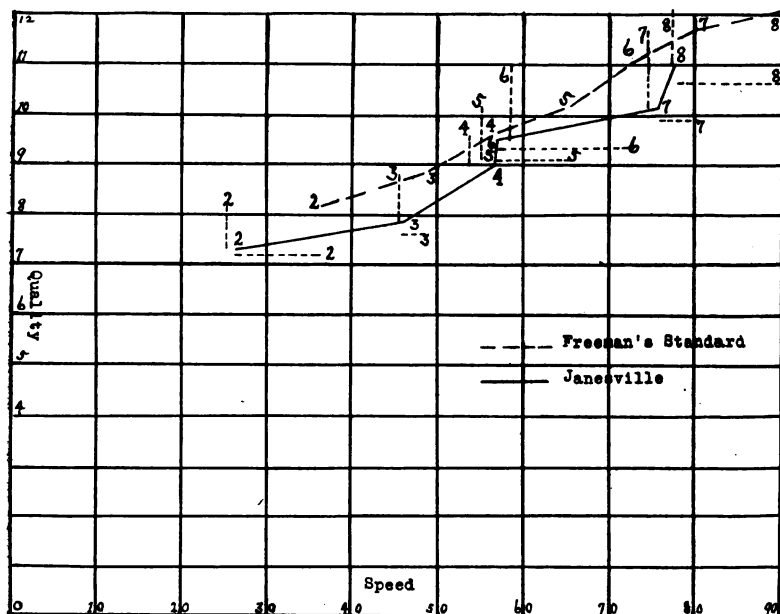


Fig. VIII. Speed and Quality of Handwriting as Compared with Freeman's Standard

The Relation Between Speed and Quality

It is desirable that children shall learn to write a good hand at a fair rate of speed. Quality is not to be sacrificed entirely for the sake of speed nor vice versa. As a matter of fact it is not the usual thing to find children who are rapid writers producing handwriting which is poor in quality. In general we may expect rapid writers to be good writers and slow writers to be poor writers. The results showing both speed and quality for the same children for grade seven are given in Table 74. The table reads:

TABLE 74.—*Distribution of Handwriting Scores in Speed and Quality for Grade Seven*

Quality	Speed										Total
	0-40	41-50	51-60	61-70	71-80	81-90	91-100	101-110	111-120	121-130	
5.....	1										1
6.....											2
7.....			1	1							2
8.....	1	1	1	3	1		1		1		9
9.....		3	6	6	8	12	5	2	2		44
10.....		1	1	5	10	2	2	2			23
11.....	2		5	10	8	9	5	3		2	44
12.....		2	1		3	3	1				10
13.....			3		3			1	1		8
14.....					1						1
Total	4	7	18	25	34	26	14	8	4	2	142
Median											10.2

One pupil wrote as good as quality 5 on the Thorndike scale at a speed of 40 letters or less per minute, etc. From the table it will be seen that some of the very poorest writers are among the slowest and that some of the best writers are among the most rapid. The relation between speed and quality however is not as marked as one might expect.

Measures for Improving Results in Handwriting

In view of the present unsatisfactory showing in handwriting some attention should be devoted to improving the efficiency of the instruction in the subject. An improvement in quality of less than 4 steps on the Thorndike scale (7.3 to 11) from grade two to grade eight does not speak well for six years of effort. Good writing is more readily obtained when the teacher is a good writer. Some improvement can be brought about by the setting up of definite goals to be reached in each grade in both speed and quality and the frequent measuring of results so far achieved. The standard established by Freeman representing the average scores derived from the better half of 56 cities represents a standard that is not too high for Janesville to strive to attain. Teachers will derive profit by a careful examination of the studies of Freeman and others on the teaching of handwriting. Children should be taught systematically to measure and to analyze their own handwriting from

time to time. Each child should be led to discover the particular factors in his own handwriting which effect its quality. Shape of the letters, spacing of letters and words, uniformity of slant and height, openness of the letters, fineness and smoothness of the lines, and alignment all enter in. The children need to discover first in which of these respects their own writing is good or faulty and second the best method of remedying each particular weakness.

COMPOSITION

As a test of ability in written English all children beginning with grade three and including grade ten of the high school were asked to write a composition on the subject "How I Should Like to Spend Next Saturday." Twenty minutes were allowed with the instruction that not over one page was expected. The Hillegas, Thorndike and Trabue scales were used in grading the composition. The former was used as a basic scale and the latter two were used as guides in deciding the exact value to be assigned to each composition. The scoring of the papers in the elementary grades was done by the teachers after an evening spent in preliminary practice and discussion of methods of marking. The papers for the high school were scored by psychology students of the Whitewater Normal School under the direction of a member of the faculty. Each paper was marked independently at least twice. Papers on which the values assigned by each of the two judges did not agree were marked by a third judge. In case two of the three judgments agreed the mark assigned by them was taken as the final value. Whenever each of the three judges assigned a different mark to a paper the highest and lowest were both rejected and the middle mark taken as the final mark.

The distribution of the scores made by each grade in composition is indicated in the table following. The medians for Janesville as well as those attained in other cities in Wisconsin and elsewhere are given in Table 76.

TABLE 75.—Distribution of Composition Scores by Grades

Value	III	IV	V	VI	VII	VIII	IX	X
0.....	31	3	9			1		
1.8.....	95	69	39	14	10	3	1	
2.6.....	33	50	34	36	28	19		
3.6.....	9	27	28	47	54	42	6	
4.7.....		8	18	36	31	31	50	18
5.8.....		2	8	10	13	23	66	17
6.7.....		2	1	6	3	11	52	41
7.7.....				3	2	5	19	29
8.8.....								15
Total.....	168	161	137	152	141	135	194	120
Median.....	1.65	2.38	2.78	3.74	3.79	4.31	5.9	6.87

TABLE 76.—Median Composition Scores

I.—WISCONSIN CITIES

Wisconsin cities	Date of test	Sec. tested	III	IV	V	VI	VII	VIII	IX	X	XI	XII
1.....	1916											
2.....	9-28	B										
3.....	10-3	B	2.43	3.97	4.35	4.87	5.55	5				
4.....	10-9	B		2.7	2.97	3.74	4.17	4.29				
5.....	10-23	B		2.89	3.68	4.19	4.55	5.26	4.76	5.66	6.07	
6.....	11-27	B		3.33	4.47	4.3	5.97					
6.....	12-5	B	1.93	2.26	2.43	4.19	4.41	4.36				
7.....	1917											
8.....	1-9	B	2.57	2.5	3.9	4.2	5.35	4.9				
9.....	3-9	A		2.86	3.68	4.4	4.22					
10.....	4-10	A	2.02	2.13	3.92	4.19	4.08	4.51				
11.....	4-12	A	1.72	2.97	3.51	4.18	3.77	4.27	4.92	5	5.44	5.44
12.....	6-4	B & A	1.72A	2.92	3.60B		5.27B	5.41B				
12.....	6-6	B & A		3.18		4.77A	4.49A	5.55A				
Janesville.....	3-24	B & A	1.65	2.38	2.78	3.74	3.79	4.31	5.9	6.87		

II.—CITIES OUTSIDE OF WISCONSIN (1)

School System	Median score attained in grades								
	IV	V	VI	VII	VIII	1st	2nd	3rd	4th
Lead, So. Dakota	3.57	4.11	4.64	5.01	5.57				
Newark, N. J. (one school).....	2.39	2.51	3.56	4.33	5.27				
Ethical Culture School, N. Y. C.....		4.01	4.72	5.39	5.74				
Chatham, N. J.....	2.95	2.85	4.10	4.02	5.29				
Salt Lake City, Utah.....	3.58	3.84	4.61	5.16	6.37				
Butte, Montana.....	2.34	2.80	3.41	3.77	4.11				
Nassau County, N. Y.....	2.76	3.42	3.82	4.18	4.56	5.00	5.25	5.68	5.94
South River, N. J.....	2.31	2.55	3.78	4.75	5.62	5.18	5.02	5.95	6.30
Mobile County, Ala.....	3.20	3.91	4.34	4.22		5.56	6.38	6.05	6.77
Mobile, Ala.....	3.31	3.85	4.60	4.95		6.69	6.93	7.24	7.54
54 high schools						4.99	5.88	6.38	6.69
Tentative Standard Medians ..	3.5	4.0	4.5	5.0	5.5	6.0	6.5	6.9	7.2

(1) From Trabue "Supplementing the Hillegas Scale." Teachers College Record Jan. 1917.

The Median Scores for the City as a Whole

The median scores indicate that the children make a poor showing in every elementary grade. This may be seen more strikingly if we consider how Janesville ranks when compared with the cities represented in the table above.

TABLE 77

	III	IV	V	VI	VII	VIII	IX	X
No. schools represented for each grade	7	21	21	21	22	18	8 ⁽¹⁾	8 ⁽¹⁾
Rank of Janesville.....	7	16	18	18 ¹	19	15	2	2
Rank of Janesville's best classes.....	1	8	3	8	19	13.5	.....	.....

¹ Seven Schools and one group of 54 schools.

If the highest scores made by any class in each of the grades are taken it will be seen that the language work of the schools is not uniformly poor in all classes except in grades seven and eight. Here no class attains even the average rank for grammar grades in cities. The median or middle score for the seventh grade (3.79) was judged as being no better than the sample below taken from the Trabue scale rated at 3.8.

I would like to go out in the after noon and play catching the ball. Go over to Bertha's house and have a few girls to come with me and be on each others side. I have a tennis ball too play with. The game is that one person should stand quite aways from another person and throw the ball too one then another. Someone has to be in the middle and try too get the ball a way from someone then she takes this persons place who she caught the ball from. Then till every person has a chance.

This is an unsatisfactory average performance for grades that far advanced in the elementary school course. Only in the high school grades do the scores attain the expected level.

In the judgment of those who observed the classroom instruction the poor results obtained in English composition particularly in the grammar grades are to be explained by the over-emphasis upon formal grammar.

Too much emphasis on the mere formal and fact side of teaching in all subjects and not enough of that kind of teaching which develops good thinking characterizes the instruction in Janesville. The effect of this formalized teaching is reflected in the lack of ideas shown by pupils when asked to express themselves in written English. The subject assigned was one

which should appeal to the imagination but too often the response was a mere cataloging of matter of fact and commonplace activities in serial order. Few wrote compositions which contained a central thought or idea to which all else that was said related. Few papers showed that vivid imagination and fluency of thought and expression characteristic of good work in composition and which should result from effective teaching of the subject.

Progress and Variation Within Grades

The progress in English from grade to grade is an insufficient return for the time and energy now spent in teaching it. The median achievement is low in grade three and continues to be low in grade eight. In the high school the effect of more concentrated and systematic training in English is marked by the improvement shown over grammar grades and the close approximation to the expected standard. The improved showing in the high school is probably due in part to a selection of pupils. The less capable students commonly drop out of school in greater numbers than do the brighter class. This would tend to raise the general level of these grades. In the elementary grades this factor is not so evident because some of the less capable students continue in school until the high school is reached.

In every elementary grade there were pupils whose papers were rated as possessing a merit not better than the first step on the Hillegas scale, or the sample valued at 1.9 on the Trabue Scale shown below.

one next S aturday I expect to go to the city leve next G aturday to see my ofriend archie king I am going to grow to the baning balys circus with hime next S aturday fefore I go I have to do my jobs feedsing the cows ard horse ard chinkens and geese next Saturday My friend is a very good fellow to go and see So my mother S aid "If I do my work during Easter week vacation I can go to the barning baley circus with hime

On the other hand, compositions such as those from which an extract is given below were found in the grades indicated.

Grade III Rated as 3.7

I should like to have a birthday party next Saturday for my little brother for he is going to be five years old Then I hope that he will invite M. P. and M. F. and D. F. and of course he has to invite me.

Because, Mamma says, so I hop to have ice cream and cake and cream potatos beans and many other good things to eat. I hope that paper will bring home some animal crackers and then we can hunt them I think that is fun last year I remember that M. F. got the moste Mamma said this year the one that found the moste was going to get a price. The reason M. F. got the most was because

Grade IV Rated as 4.7

Next Saturday H. and myself are going up a mile from our place and get some pussy willows. We are going to take some baskets and get a lot of them. H. is going to come up in the morning and we are not going till the afternoon. I wish H. would come up Friday night and go to school monday morning with me. When H. comes out we will have so much fun.

Grade V Rated as 5.8

Next Saturday I would like to go to Spaldings pond on a hike. I would take my dinner and cook it over a fire. After dinner I would fix some set lines for bullheads and take a tramp in the woods and see if I couldnt shoot some Snipes.

Grade VI Rated as 6.7

If it were summer I would like to go to Lake Koshkonong fishing. I and my father would start out early in the morning. Four o'clock would be early enough. We would go to the livery and hire a horse and buggy. When the sun comes up we would be about to Milton Junction. I would fall asleep riding and wake up to find my self in a strange place. My father would be coming to unharness the horse and the sun would be quite high by this * * *

Grade VIII Rated as 6.7

I would like to spend next Saturday playing Robin Hood.

We go deer hunting by having one boy for a deer and the others for Robin Hood and his hunters. We shoot at the deer with blunt arrows.

When the deer has been shot we go to our trysting tree and capture some other boy in the band for the sheriff of Nottingham. When we have the sheriff we make him stay to our make believe feast and rob him.

Teachers may bring about improvement by building upon the work of these good writers among the children. Their work may serve as a level of expectancy for others in the class to attain. Teachers will do well to analyze the productions of these children carefully to determine the elements which make them superior to those of other children. Well-known standard scales should be employed frequently to facilitate analysis and to measure the amount of improvement over a given period. Such analysis should stimulate teachers to a thoughtful study of the whole subject of composition, its purposes and possibilities. They will do well to observe the work of good live language teachers elsewhere. This should be supplemented by

reading and group discussion of the best professional books on the teaching of English composition.

The Qualities Valued in Composition

Preliminary to grading the children's papers the teachers were asked to name qualities which they considered in marking composition papers. These were made the subject of a group discussion. Qualities commonly considered may be listed somewhat as follows:

Unity	Vividness	Sentence structure
Coherence	Imagination	Punctuation
Emphasis	Choice of words	Spelling
Life	Visualization	Paragraphing
Maturity of thought	Color	Use of capitals
Originality	Figurative language	Grammar

The first twelve of these belong more purely to the thought or expressional side of composition. They consider the ideas which the child has to express and the tone in which they are expressed. The latter six represent the more purely mechanical features of the composition. Several of them would scarcely be considered were a child's composition given orally. Strange as it may seem the mechanical or formal qualities were among those to be mentioned first by the teachers. This is, however, in accord with the formal grammar teaching so common in the Janesville schools. As previously mentioned in the chapter on Instruction the teachers of Janesville will need to devote more thoughtful effort to the development of the expressional side of language. Children must be led to develop ideas in connection with all subjects. They must be taught primarily to think and to express more so than to memorize facts and rules. There are few children whose life is not rich with first hand experiences, e. g. those with pets and other animals, friends, adventures, plays and games, pleasures, fears and observations of nature. These they love to tell about when properly encouraged. It is the task of the teacher to discover these experiences and to train the children to express them effectively both in oral and written form. This is a far different procedure from that which requires them to memorize grammatical forms and rules of syntax and then gives little or no occasion for their use. The child must be taught first to desire to express ideas and only secondly will he need to search

for the mechanical form in which to state them. Then it is that forms cease to be "dry bones" for him and have a useful purpose. He has a motive for learning those forms which he needs to know while those which serve but to discourage him with school itself may be left untouched.

RECOMMENDATIONS

1. That teachers devote less time to formal grammar teaching and more to the development of the thought and expressional side of language work.
2. That the amount of formal and fact teaching in all subjects be decreased and that more attention be devoted to the thought content of each. Every lesson should afford training in language expression.
3. That the best composition work in each grade be carefully studied for its merits and that it serve as a level to be reached by others.
4. That the teachers make frequent use of standard scales to measure the degree of attainment and the amount of improvement.
5. That teachers observe successful language teaching elsewhere.
6. That the teaching of language be made the subject of study and discussion at teachers' meetings.

THE TRABUE LANGUAGE TESTS

The Trabue Language Completion Tests B and C were given in all elementary grades beginning with the second. The nature of the test may be seen from the reproduction of the C test below. Each test offers approximately equal difficulty.

Write only one word on each blank

Time Limit: Seven minutes

Name.....

TRABUE

LANGUAGE SCALE C

2. The sky blue.
5. Men older than boys.
12. Good boys kind their sisters.
19. The girl fell and her head.
24. The rises the morning and
..... at night.

30. The boy who hard do well.
37. Men more to do heavy work
..... women.
44. The sun is so that one can not
..... directly caus-
ing great discomfort to the eyes.
53. The knowledge of use fire is
..... of important things known by
..... but unknown animals.
56. One ought to great care to the
right of for one who
bad habits it to get away from
them.

The tests measure the child's command of language through the aptness shown in filling out sentences from which some words have been omitted. They afford an indication as to the general maturity and richness of the child's thinking and as such furnish a very satisfactory measure of his general intelligence. Children who do well on this test are quite likely to do well on any other test of good social qualities. If general intelligence and maturity of thought are to be considered, as they should be, in making promotions and organizing class groups these tests furnish a valuable aid in making such selection. These tests afford very desirable means of discovering such facts as the variation of abilities within grades, the progress from grade to grade and the overlapping of abilities from one grade to another.

Seven minutes were given to each of the two tests. The papers were scored by the teachers. Each paper was checked by a second person and in case any change was made by the second person they were passed upon by a member of the survey. Two points were allowed for each sentence correct, (i. e. making perfect sense), one point for each almost correct, (i. e. making sense but not the very best), and no value to those incorrect or incomplete. The highest possible score on each is 20.

The distribution of the scores on each test will be seen from the distribution tables following:

Distribution of Scores in Trade Language

TABLE 78

Scale C

TABLE 79

Scale B

Score	II	III	IV	V	VI	VII	VIII	Score	II	III	IV	V	VI	VII	VIII
0.....	20	1						0.....	32	2					
1.....	31	17	1	1				1.....	21	7	1				
2.....	3	2						2.....	2	3					
3.....	27	33	8	2		1		3.....	42	22	4	2	1		
4.....	7	3						4.....	4	7	1	1	1		
5.....	22	28	17	6	3			5.....	30	39	16	3	1		
6.....	7	9	9	6	1	2		6.....	7	13	11	3	4	2	
7.....	18	26	30	22	7	3	1	7.....	8	30	20	17	4	5	1
8.....	4	22	21	13	13	10	3	8.....	3	12	15	14	5	2	
9.....	10	16	29	23	20	16	9	9.....	1	25	41	25	21	10	
10.....	5	14	22	19	25	14	14	10.....	1	6	22	15	20	12	9
11.....	1	6	12	27	34	28	27	11.....	12	22	25	30	25	21	10
12.....	1	2	13	12	28	25	22	12.....	4	11	21	39	29	21	11
13.....		1	7	5	22	24	23	13.....		8	8	20	25	20	12
14.....			2	4	4	11	13	14.....		1	5	8	20	18	18
15.....			1	1	3	10	13	15.....			1	6	10	20	20
16.....					1	2	6	16.....				1	2	7	6
17.....						1	4	17.....				1			7
18.....						1	1	18.....							2
19.....							1	19.....							
20.....							1	20.....							
Total..	156	183	175	141	161	146	137	Total..	155	183	178	141	162	148	136
Median....	4.9	7.5	9.9	10.9	12.3	13.7	13.7	Median....	4.5	7.9	10.2	11.3	12.8	13.6	14.3
Standard..	3.0	6.0	8.0	9.6	11.0	12.3	13.3	Standard..	3.0	6.0	8.0	9.6	11.0	12.3	13.3

The schools make a good showing in every grade on both tests. No single grade falls below the standard median on either test. Janesville children do not show a lower ability in language and general intelligence than children elsewhere in the same grades. From this standpoint it appears that the special promotions made in February were justified.

There is a decided overlapping of abilities from one grade to another as in other tests. The best pupils in grade two excel some of the children in each of the other grades. It is more striking in the case of test C. Here the best 10 per cent of the second grade did about as well as the poorest 10 per cent of the eighth grade. The pupils who make high scores particularly in lower grades will bear watching throughout the course. Many of these will very probably be able to progress more rapidly through the grades. On the other hand children who made low scores on these tests will bear watching in a different respect. These will fill the ranks of the overage children in years to come unless determined efforts are made to adapt the teaching and teaching material to their level of ability. It is recommended that the records made by individual

children on these and other tests be carefully preserved and examined from time to time. Those who made especially good scores and those who made poor scores are in evident need of individual attention. Records of individuals in the tests of general intelligence should be compared with the records of the same individuals in other tests. This will serve to discover whether a child shows marked aptitude or weakness in certain subjects. The scores in these tests should be freely referred to in organizing classes for a junior high school.

SUMMARY

The schools as a whole show satisfactory attainments in the lower grades in the fundamental operations of arithmetic when measured by the Woody tests. In these grades, Janesville children do much better than Woody's expected standard. They do somewhat better than other Wisconsin children, except in division. In advanced grades, the results are not so gratifying. Apparently teachers cannot expect proficiency attained in earlier years to persist throughout the course without some attention to drill in later years. Wide variations in the performances of children of the same grade and marked overlapping of abilities from grade to grade suggest the need of careful study of the individual needs of children on the part of the teachers. The fact that some classes in the same grade were consistently high and others consistently low in each of the fundamental operations indicates the need of a study of the methods in use by different teachers.

Analysis of the particular types of examples which proved difficult reveals that certain processes are more potent causes of failure than others. In division, this is indicated by the greater frequency of error in upper grades on examples which involve inverting the divisor, decimals, reduction of remainders, placing a cipher in the quotient, and denominate numbers. Failures result not only from marked weakness in ability to manipulate certain processes, but from the absence of well formed general habits of estimating answers and checking results. When results in the fundamental operations are measured by the Courtis tests, requiring rapid calculation, the children do not exhibit superior attainments even in the lower

grades. This can be accounted for by a lack of emphasis on rapid and accurate calculation.

On the thought side of arithmetic, i. e., in written examples requiring reasoning, the children make a very poor showing. There is small progress from grade to grade. The poor results are fairly uniform. Only in a very few cases do classes exceed standards attained in other cities.

This condition of a satisfactory attainment in the fundamental operations and poor ability in reasoning processes suggests the need of greater economy in teaching. Increased proficiency may be attained through emphasis upon abbreviated forms of analysis, better training in reading, practice in visualizing the conditions called for, and careful analysis of individual needs of pupils to determine their teaching needs.

The results in reading indicate that in grades ^{six} seven, eight, and eleven, Janesville children read better than average children, but in the remaining grades, they do not read as well. It would be far from the truth, however, to say that all of the children in any grade are poor readers. A study of the results by buildings indicates that the city has some classes in every grade that read far better than the average. The marked differences found between classes of the same grade in different buildings should be a cause for careful study of the methods of teaching reading now in use. Some of the causes which may be offered in explanation of the low scores in some grades and classes are: (1) the fact of the recent introduction of semiannual promotions; (2) a scarcity of suitable reading material; (3) a lack of sufficient emphasis on thought reading; and (4) mediocre teaching.

The schools did not do well in either of the spelling tests. No grade reached or exceeded the expected average on the Ayres test. There are very few words in the Buckingham test on which the children exceeded the expected average. They were below on most of them. The poor showing in spelling is not due to lack of time devoted to the subject. It is probably due to several causes. Among the possible causes are: (1) the lack of a definite course of study which results in a poor selection of words taught; (2) the selection of too large a proportion of words taught from reading and spelling texts; (3) the failure to adapt the selection of words to the needs of individual children on the basis of their own need for knowing how to

spell them; (4) the attempt to teach too many words; (5) the failure to recognize differences in the difficulty of words and consequent differences in the effort required for mastery; and (6) inadequate methods of teaching.

The schools have a large proportion of children who are poor writers and only a small proportion of those who are good writers. The children write about as well as average Wisconsin children, but not as well as Iowa children nor as well as the children in most of the large cities outside of Wisconsin with whom comparisons may be made. In point of speed, there are both rapid and slow writers in every grade. The proportion of slow writers in the lower grades is unusually large. It is probable that this is due to a lack of sufficient emphasis upon speed in these grades. In the upper grades, Janesville children attain a speed more nearly equal to that of other large cities and to the Iowa standard. In every grade, however, they are much below the Freeman standard representing the average of the better half of 54 cities.

Satisfactory results in writing are not to be attained through giving more time to the subject. While considerable variation was discovered in the time allotted to writing in different buildings, the results do not vary proportionately. There is a need of setting up definite goals in both speed and quality of handwriting which teachers and pupils should consciously attempt to reach.

Poor results in composition are evident in each of the elementary grades. There is little progress from grade to grade. The high school, on the other hand, does well in composition. When the results are compared with other cities, Janesville ranks well up among high schools, but she ranks near the foot of the list among elementary schools. It is not to be understood from this that Janesville grade children are uniformly poor in composition. In every grade except the seventh and the eighth, some classes rank well up with the best. The work of these best classes and of the best composition writers in every class may well serve as standards which a large proportion of the children in any given grade can hope to attain. The cause of the poor results in composition is evidently due to too great an emphasis upon the formal and fact side of teaching in all subjects, and to a lack of stress upon that kind of teaching which develops good thinking. Emphasis on the formal

and mechanical phases of the subject characterize the teaching in composition.

On the whole, the achievement of the children, as shown by the tests in various subjects, is not satisfactory.

RECOMMENDATIONS

1. A definitely outlined course of study which shall include a statement of aims, minimum requirements of subject matter, suggested variations and options, and successful methods of presenting various topics.
2. More careful provision for, and grading according to, individual needs. This can be accomplished through varying the content of the course of study, promotion of unusually capable pupils at irregular intervals, and special classes.
3. The establishment of definite standards of attainment.
4. Analysis and critical study of the methods of teaching in use.
5. A greater emphasis upon training children to think and to exercise judgment in all subjects and less upon formal facts.
6. Additional preparation on the part of the teachers.
7. Closer supervision of instruction in all subjects.

XIV SUPERVISION OF INSTRUCTION

Skillful supervision of classroom teaching is the most effective single means of increasing the efficiency of a school system. The results secured throughout any system of schools are dependent to a great extent upon the quality of the supervision that is provided. The efficiency of the schools is increased because of the fact that intelligent, professional supervision (1) establishes better educational ideals among teachers, (2) establishes definite and valuable aims, (3) improves teaching methods, (4) insures greater economy of effort on the part of teachers, and (5) consequently stimulates greater interest and effort on the part of the pupils.

Successful achievement of the aims just indicated requires:

- (1) A high grade professional preparation on the part of those who supervise instruction.
- (2) An adequate amount of time to devote to the business of supervision.
- (3) Good organization of the system of supervision.

Preparation for Supervising Instruction

Ability to supervise grade instruction successfully implies that the supervisor should possess an intimate knowledge of the amount and kind of work that should be expected from the elementary schools. It implies also that the supervisor should be familiar with the best methods of accomplishing such results and finally it implies the ability to secure such skill on the part of the teaching corps as will bring about the desired results. In the judgment of the survey staff, the present superintendent is prepared to carry on the work of supervision but he is handicapped by the lack of time at his disposal.

Time for Supervision

It is the chief business of the superintendent of schools to bring about efficient teaching and supervision. At present in Janesville, as in other cities, office work, answering correspondence and telephone calls and preparing records occupy a

large portion of his time. While the success of a superintendent in the eyes of the public is often measured by his success in managing the business affairs of the schools, it is a costly method of conducting the school business when the major portion of the superintendent's time is given to office work. There is a difference between "keeping school" and "teaching school" and there is a difference between routine office work and supervising instruction. At present the amount of office work demanding the superintendent's attention prevents him from giving sufficient time to supervision. Sufficient high grade office assistance should be furnished so that he may be free to devote much more time to supervisory activities.

The number of teachers employed and the wide distribution of buildings in Janesville makes it impossible for one person even devoting all of his time to supervision, to do all that needs to be done. When we consider that more than 50% of the elementary teachers were rated as doing work that was no better than fair, the need is evident.

Present Organization of Supervision in Janesville

While some time is devoted to personal conferences with teachers in the classroom, the limited time available has made it necessary to conduct much of the supervision through the medium of teachers' meetings and bulletins. During the past year the number of meetings held included 12 general teachers' meetings, 6 principals' meetings and 6 departmental meetings. The plan for the coming year includes for each month one meeting of a general nature, one of principals and one for each department. This number is none too great. Provision should be made so that teachers will not be required to take all of the time necessary to attend meetings from after school hours. School can be closed at least thirty minutes early for those very remote from the central meeting place, and fifteen minutes before regular dismissal time for those near by, enabling all to reach the meeting at the same time.

The general quality of the bulletins sent out from the central office during the past year indicates a high degree of supervisory ability on the part of the superintendent. These bulletins on instruction included the following timely topics:

The general conduct of the recitation
What is meant by a good instructor

Matters considered important in the conduct of the recitation
Suggestions on examinations and marking papers
Provisions for self-activity at home and at school
The approximate memory spans in syllables for meaningful sentences for children at each age
A list of expressions and verses valuable in enunciation drills
Games for primary children
A suggested list of books on hygiene
A suggested list of topics on morals and manners
Suggestions on the preparation of the course of study

A number of these were made the subject of discussion at teachers' meetings.

Where the Need of Supervision is Urgent

The need of more supervision in Janesville is made more pressing and its difficulties are increased owing to the absence of a course of study. The work of preparing a new course in a number of subjects upon which the teachers and superintendent have been engaged during the past year needs to be continued. A good course of study will indicate the aims which the teaching of each subject strives to accomplish and it will likewise give some indication as to the relative importance of each. It will contain a minimum of subject matter to be taught together with suggested variations and optional choices of material which may be used. It will include also some of the most successful methods used by teachers in presenting various topics and sources of reference material. At present these aids to teachers are largely lacking. As a result aims in teaching the various subjects and conceptions of what should be accomplished are indefinite and varying. Teachers work independently of each other and there is little assurance that one teacher will not duplicate the efforts of another. A definite course of study would remedy such conditions as found in the case of spelling, referred to in the chapter on Instruction, in which each teacher selects her own list of spelling words without reference to selections made by the teachers in grades below.

The effectiveness of the teaching in Janesville would be very much increased were teachers familiar with the technique of teaching children *how to study*. The present efforts of some of the teachers to supervise class study do not meet with a marked degree of success because of this lack of training in teaching. This condition could be remedied through closer supervision.

Wasteful and uneconomical methods of instruction now in use need to be eliminated. Such practice as conducting drill exercises so that only the child reciting benefits, when all are in need of being helped, or of requiring all to spend time on processes that are already familiar to most of the class, are pernicious since they tend to destroy interest.

Conditions can be improved through closer supervision. Much good will result by capitalizing the efforts of the most successful teachers for this purpose. It should be possible for the supervisor to have the services of either the office or advanced student stenographers at times so that unusually good recitations may be taken down verbatim. Copies can then be provided for each teacher. The report of a well-taught lesson may be made the basis of a discussion at teachers' meetings and its particular elements of strength made evident.

The teachers are in need of being taught to see the important problems in their own teaching. When some teachers report no difficulties encountered in their work as eleven did there is an evident lack of progressiveness. The most successful teachers are continually finding new teaching difficulties demanding a solution. They are continually experimenting with new methods of attack. It is significant that a number of teachers failed to answer the question: "Are you consciously working on one or more definite problems of instruction in connection with your work," and that others failed to list professional problems of any particular merit.

Remedying Existing Conditions

In justice to the school, the community, and the teacher, it is to be desired that each teacher render the best service of which she is mentally and physically capable. In the judgment of the surveyors, the capacity of the teachers of the city to render a high grade of service has by no means reached its highest level. The quality of the teaching can be much improved through more supervision of the best kind. It will be necessary for supervisors to make use of all the means at their command. Teachers must be kept growing mentally and professionally through proper stimulus and guidance.

Neither the board nor those in charge of the immediate supervision can afford to lose any opportunity whereby teachers may become imbued with new and improved ideas, an enlarged

scope of view, and a more scientific attitude toward teaching and teaching products. Some of the means of supervision including those at present utilized and others which the supervisor should employ are these:

1. Preparation of a modern course of study containing statements of aims; suggested subject matter and optional variations thereof; together with illustrations of successful methods of presentation. This should be carried on with the assistance of the teachers.
2. Special attention given to observation and analysis of classroom teaching by the supervisor. In each case, this should be followed by individual conference with the teacher for discussion of the exercise and the making of constructive suggestions for improvement.
3. Careful directions for making daily programs in each classroom together with later discussion and correction. This should include the subjects to be taught, their proper sequence, and the time to be allotted each subject.
4. Demonstration teaching by the supervisor or the superintendent or by successful teachers to illustrate a given method or principle of educational practice. This should include both teaching before the individual teacher and teaching before groups of teachers. In each case, the teaching should be followed by a careful discussion of the particular points which the demonstration sought to illustrate.
5. Provisions for visiting periods whereby not only weak but strong teachers may visit successful teaching in other grades, buildings, or cities. These should be accompanied by conferences both before and after the visit at which the supervisor or superintendent, the teacher whose work is to be observed, and the teacher who is to make the observation are present.
6. The application of standard tests and measurements for the purpose of discovering such matters as the degree of success attained, the variation between the individuals within a class, or between the same grades in different buildings, and the seriousness of the overlapping of abilities from one grade to another. The application of standard tests should be followed by a careful study and interpretation of the conditions revealed and a discussion of remedial measures.
7. Frequent department and single grade teachers' meetings for the discussion of principles, methods, and results of classroom procedure.
8. Promotion of school exhibits, parents' days, social center work, professional reading, summer school attendance, and participation in the meetings of local and state teachers' associations.

9. Careful supervision of plan books in which each teacher outlines a problem or topic (for example in geography, or history) extending over several lessons together with an indication of the methods of presentation she intends to use. The supervision of lesson plans should include the distribution of plans for the teaching of a particular lesson or series of lessons prepared by the supervisor and also the preparation of copies of the most successful lesson plans worked out by teachers within the system. It should include also bulletins of information, sources of material, and the results of successful experiments conducted by local teachers and teachers elsewhere.

It may be readily seen from the topics indicated that supervision is complicated and that it requires much time and energy. The second means mentioned, classroom visitation, if efficient, requires that the superintendent visit at least a whole lesson unit. This observation should be followed by a careful study of the lesson and its aims by the superintendent. He is then ready for a thoughtful, friendly analysis of it with the teacher. He must show her if need be the relation of this particular lesson to basic principles of education. Free discussion by both teacher and observer must follow if benefit is to result. This necessary procedure implies that the supervisor, except in primary grades, must remain in the classroom at least thirty minutes to see the lesson. He may need to spend some little time in thoughtful study of just how *best* to help this teacher to discover the strong points in her own teaching and to see her errors, and how to aid her to grow and improve. He will often be obliged to remain until after school to do this. This plan of class visitation gives real help to teachers, and encourages them to study earnestly their own problems and consequently to increase their skill from year to year.

The short visit, the written criticism, the general meeting are stimulating, but they do not get at the individual causes of strength or weakness nor do they insure the required amount of improvement in teaching practices. The plan outlined for effective classroom visitation can be carried on *only when the superintendent or supervisor can visit each teacher often enough to keep in touch with her work and to have her feel his personal interest in her problems.*

As has been said, Janesville is too large a city for this type of work to be accomplished by one person. Either of two plans

for improvement is possible. Each building may have a supervising principal who does the kind of supervision suggested, under the general direction of the city superintendent or an assistant supervisor may be employed to extend the supervision from the main office. The latter plan is recommended by the survey staff.

The employment of an expert grade supervisor who will cooperate with the superintendent in carrying out all of the agencies of supervision has been planned for the coming year. It may be found, however, that there will be need for still more supervision later, in order to vitalize the teaching service in Janesville to such a degree that each teacher in the system will be doing the most constructive kind of teaching of which she is capable. Adequate supervision does not make the work of the regular teacher more difficult. On the contrary, it makes teaching more of an art and more of a joy to the teacher who is able to realize her own continued improvement and increased capability for service. It often happens that school boards, not appreciating the difficulty and complexity of real supervision, take a teacher from the system for this work, or secure some one from outside, who has not had the best modern training. This would, of course, be in the case of Janesville a greivous mistake.

XV PROGRESS AND CLASSIFICATION OF PUPILS

AGE-GRADE STUDY

The age-grade conditions, like the elimination statistics, in Janesville, have been much affected by the system of semi-annual promotions installed in mid-year 1916-17. The following method was used in installing the system: Grades were divided into advanced and slow sections. The advanced sections were designated as the A section and were promoted to the B section of the grade above at the middle of the year. Thus, the 2B grade would consist of those pupils who had entered the first grade school in September 1916, but had shown themselves able to do a good grade of work during the half year of their school life. The 2A section would consist of those pupils who had been in school a year and a half, but who had not made an unusual record of accomplishment during the first semester of their second year.

The result of this change as affecting the first 8 grades is shown in retardation figures for 1913-14, as compared to those for the second semester 1916-17.

	Underage	Normal	Overage
State average, 1913-14.....	13%	34%	53%
Janesville 1913-14.....	16%	39%	45%
Janesville 1916-17 (2d half).....	36%	35%	29%

The detailed table for the 12 grades of the Janesville schools, according to age-grade conditions found in March 1917, is as follows:

TABLE 80.—Age-Grade Distributions

March, 1917

	Total	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Total.....	1880	3	89	175	183	157	178	146	151	170	122	141	117	128	107	44	13	
Grade I.....	171	3	89	106	16	6	6	1	1									
Grade II.....	176			59	70	29	8	1	2									
Grade III.....	202			10	80	65	29	13	3	1		1						
Grade IV.....	186				17	49	61	30	16	9	4							
Grade V.....	156					8	47	42	36	14	6	3						
Grade VI.....	179						27	46	38	54	11	3						
Grade VII.....	159							13	44	53	41	5	2		1			
Grade VIII.....	146								11	39	50	34	10	2				
Grade IX.....	173										8	79	50	29	6	1		
Grade X.....	150											2	15	46	56	27	4	
Grade XI.....	101												1	9	32	44	12	3
Grade XII.....	81														9	29	27	15

The following table interprets these figures:

TABLE 81

	Total	Underage		Normal		1 yr.	Over age	2 yr and up	Over age
		No.	%	No.	%				
Total.....	1880	536	28	671	36	446	24	227	12
Grade I.....	171	35	21	106	62	16	9	14	12
Grade II.....	176	66	37	70	40	29	17	11	6
Grade III.....	202	90	45	65	32	29	14	18	9
Grade IV.....	186	66	35	61	33	30	16	29	16
Grade V.....	156	55	35	42	27	36	23	23	15
Grade VI.....	179	73	41	38	21	54	30	14	8
Grade VII.....	159	57	36	53	33	41	26	8	5
Grade VIII.....	146	50	34	50	34	34	23	12	9
Grade IX.....	173	8	5	79	45	50	29	36	21
Grade X.....	150	17	1	46	31	59	37	31	21
Grade XI.....	101	10	10	32	32	44	43	15	15
Grade XII.....	81	9	11	29	36	27	33	16	20

The outstanding facts which appear from this study are three. (1) There is an unusually low proportion of age retardation, as technically defined, in the Janesville public schools. (2) The proportion of pupils of normal age is also unusually low. (3) Retardation in the high school does not reflect the low proportion found in the grades.

1. Retardation in the Janesville schools is technically low. This is accounted for in large part by the recent inauguration of semiannual promotions. The correction has been in part but a surface correction, and while this was perhaps inevitable, still the fact constitutes a problem for future solution. It will be easier to bring grades up to standard under present conditions and there is every indication that the future will establish and continue the progress which has thus far been made.

2. It is probable, from the age-grade analysis, that the pupils advanced through the semiannual promotion system were largely the normal and the underage pupils. The result is a very small proportion of pupils of normal age in the various grades. As the system works out, it is to be hoped that both the underage and retarded groups will decrease so that the majority of pupils will be of normal age, and the underage and overage groups will continue approximately equal to each other.

3. Retardation in the high school is large (54.5%). Part of this is due to past grade conditions, and to retardation in rural schools. A large part, however, is remediable. Too many high school students take five years to finish as is shown in the section on High School Mortality, p. 309, or are failed in high school work (see "Students Dropped, Failed, and Promoted," p. 311.) Too few students (none in 1915-16 and 1916-17) finish in less than four years, or are encouraged to try to do so. It is recommended that activity looking toward the correction of these conditions be instituted in the Janesville high school.

AGE-PROGRESS STUDY

In addition to the age-grade study, an age-progress study was made, correlating the age of the pupil with the number of years he had spent in school. For the purpose of this study, one year only per grade was reckoned as normal, i. e. six years old for the first grade, seven years old for the second, and so on. In the table following, children who have made rapid progress are listed as rapid; those who have made normal progress, as normal; and those who have made slow progress, as slow. The summary of findings is as follows:

TABLE 82

Age	Progress	Number	Per cent
Total		1,375	100.0
Young, and have made rapid progress.....		309	22.5
" but " " normal "		170	12.4
" " " " slow "		13	0.9
Normal, and " " rapid "		41	3.0
" " " " normal "		366	26.6
" but " " slow "		78	5.7
Old and " " rapid "		14	1.0
" " " " normal "		115	8.4
" but " " slow "		269	19.5

A table showing the combined results for the eight grades as a whole follows:

TABLE 83.—Age-Progress, Janesville, March, 1917

P R O G R E S S	A g e									
		2 years below normal	1 year below normal	Normal	1 year above normal	2 years above normal	3 years above normal	4 years above normal	5 years above normal	6 years above normal
2 yrs. below norm.	6	2	2	2						
1 yr. " " "	75	226	39	9	1	2				
Normal	14	156	366	94	16	5				
1 yr. above norm.	1	12	76	148	45	16	5	1		
2 yrs. " " "			2	15	17	6	1	1		
3 " " " "				1	4	3				
4 " " " "							1			
5 " " " "									1	

The showing of this study is practically the same as that of the age-grade study. The analysis was not extended to the high school. It is not necessary to analyze results in detail; they show good conditions as to slow progress, and an unusually small proportion of "normal-normal" progress.

HIGH SCHOOL MORTALITY

It is essential to the maintenance of a successful high school system that as many eighth graders as possible enter and progress normally through the four high school years. To form grounds for an opinion on the success of the Janesville high school in this regard, a study was made of the 1912-13 eighth

grade class, together with their subsequent record of school attendance. 153 pupil records were investigated, comprising

17, or 11%, who dropped out of school during 8th grade.

17, or 11%, who failed of promotion to high school in 1913.

32, or 21%, who received average 8th grade scholarship marks of 73-80.

41, or 27%, who received average 8th grade scholarship marks of 81-85.

46, or 30%, who received average 8th grade scholarship marks of 86-94.

The following table shows the history of the 136 eighth grade students who attended 8th grade through the school year 1912-13:

TABLE 84

"Lost" between 8th grade and H. S.....	33
One year of high school.....	14
Two years of high school.....	19
Two years of high school (sophomore 1916-17).....	1
Three years of high school.....	8
Three years of high school (junior 1916-17).....	4
Four years of high school (junior 1916-17).....	17
Four years of high school (seniors 1916-17).....	36
Went to school away from Janesville.....	4
Total.....	136
Never entered high school.....	33 or 24 %
Dropped before completing.....	41 or 30 %
Retarded two years.....	1 or 1 %
Retarded one year.....	21 or 15.5%
Normal progress.....	36 or 26.5%
Entered other high schools.....	4 or 3 %
Total.....	136 or 100 %

This table, interpreted by percentages, is as follows:

The result of this study points to a high mortality and a large amount of retardation within the Janesville high school. Upon correlating scholarship records with subsequent history it was found that there was the connection to be expected between scholarship and high school progress. Records for the four scholarship groups follow:

1. Pupils failing of promotion

Never entered high school.....	8 or 47 %
Dropped before completing.....	4 or 23.5%
Retarded 2 years.....	1 or 6 %
Retarded 1 year.....	4 or 23.5%
Total.....	17 or 100 %

2. Pupils marked 73-80

Never entered high school.....	9 or	28%
Dropped before completing.....	13 or	41%
Retarded 1 year.....	5 or	16%
Normal progress.....	3 or	9%
Entered other high schools.....	2 or	6%
Total	32 or	100%

3. Pupils marked 81-85

Never entered high school.....	10 or	24%
Dropped before completing.....	14 or	34%
Retarded 1 year.....	7 or	17%
Normal progress.....	9 or	22%
Entered other high schools.....	1 or	3%
Total.....	41 or	100%

4. Pupils marked 86-94

Never entered high school.....	6 or	13%
Dropped before completing.....	10 or	22%
Retarded 1 year.....	5 or	11%
Normal progress.....	24 or	52%
Entered other high schools.....	1 or	2%
Total.....	46 or	100%

The recommendation arising from this study is increased attention to the problem of keeping children in school and of making it possible for every child to make normal school progress. The establishment of a Junior High School is no doubt desirable in this connection.

STUDENTS DROPPED, FAILED, AND PROMOTED IN HIGH SCHOOL SUBJECTS

During the school year 1916-17, a study was made in the department of public instruction to find the proportion of high school students dropped, failed, and promoted, in each of fifteen high school subjects. Results were published in the Biennial Report for 1914-'16, and also in "Educational Administration and Supervision," January 1917.

The Janesville records show a considerable variation from the norm of the seventy-five Wisconsin high schools studied. A comparison follows:

TABLE 85.—*Seventy-five Wisconsin High Schools 1914-'15*

	Total	Dropped		Failed		Promoted	
	No.	No.	Per ct.	No.	Per ct.	No.	Per ct.
Total.....	88,640	3,703	9.6%	3,408	8.8%	31,529	81.6%
English							
1st year.....	5,482	566	10%	544	10%	4,322	80%
2nd year.....	4,186	367	9%	308	7%	3,461	84%
4th year.....	1,781	86	5%	48	3%	1,647	92%
Mathematics							
Algebra.....	5,966	716	12%	847	14%	4,403	74%
Geometry.....	3,542	415	12%	448	13%	2,679	75%
Science							
Physics.....	1,988	89	4%	56	3%	1,843	93%
Physical Geography.....	2,446	217	9%	249	10%	1,980	81%
Ancient History.....	3,317	349	10%	329	10%	2,639	80%
German							
1st year.....	2,276	262	12%	235	10%	1,779	78%
2nd year.....	1,380	71	5%	65	5%	1,244	90%
Latin							
1st year.....	1,030	115	11%	122	12%	793	77%
2nd year.....	572	27	5%	39	7%	506	88%
Domestic Science							
Cooking.....	1,863	128	7%	41	2%	1,694	91%
Sewing.....	1,723	177	10%	38	2%	1,508	88%
Manual Training.....	1,188	118	10%	39	3%	1,031	87%

Seventy-five Wisconsin High Schools 1915-'16

	Total	Dropped		Failed		Promoted	
	No.	No.	Per ct.	No.	Per ct.	No.	Per ct.
Total.....	40,071	3,878	10%	3,538	9%	32,655	81%
English							
1st year.....	5,885	686	12%	634	11%	4,553	77%
2nd year.....	4,143	409	10%	372	9%	3,362	81%
4th year.....	2,029	102	5%	59	3%	1,868	92%
Mathematics							
Algebra.....	6,058	764	13%	778	13%	4,516	74%
Geometry.....	3,612	372	11%	466	13%	2,774	76%
Science							
Physics.....	1,894	97	5%	71	4%	1,726	91%
Physical Geo.....	2,160	164	7%	230	11%	1,766	82%
Ancient History.....	2,855	267	9%	329	12%	2,254	79%
German							
1st year.....	2,141	244	11%	180	9%	1,717	80%
2nd year.....	953	81	6%	61	4%	1,296	90%
Latin							
1st year.....	1,188	150	13%	142	12%	892	75%
2nd year.....	675	39	6%	51	7%	585	87%
Domestic Science.....							
Cooking.....	2,359	158	7%	67	3%	2,134	90%
Sewing.....	2,215	177	8%	69	3%	1,969	89%
Manual Training.....	1,421	156	11%	29	2%	1,236	87%

Janesville 1915-'16

	Total	Dropped		Failed		Promoted	
	No.	No	Perct.	No.	Perct.	No.	Per ct.
Total	1,356	96	7.1%	138	10.2%	1,122	82.7%
English							
1st year.....	184	9	5%	19	10%	156	85%
2nd year.....	131	14	11%	12	9%	105	80%
4th year.....	38	1	3%	0	.....	37	97%
Mathematics							
Algebra.....	215	11	5%	23	11%	181	84%
Geometry.....	106	5	5%	17	16%	83	79%
Science							
Physics.....	73	4	5%	2	3%	67	92%
Physical Geo.	66	5	7%	13	20%	48	73%
Ancient History	119	9	7.5%	22	18.5%	88	74%
German							
1st year.....	31	3	10%	7	22%	21	68%
2nd year.....	30	0	.....	5	17%	25	83%
Domestic Science							
Cooking.....	153	14	9%	9	6%	130	85%
Sewing.....	159	15	9%	9	6%	135	85%
Manual Training	52	6	12%	0	.....	46	88%

A comparison of these tables reveals that Janesville ranks slightly higher than the average of the seventy-five high schools in the per cent of pupils promoted at the end of the school year in high school subjects. This standing, however, is true in only six of the thirteen high school subjects studied. In the other seven, the results show that Janesville is distinctly below the average in the number of students failed.

In the study of high school mortality, page 309, it was noted that a considerable number of pupils took five years to graduate from high school. This was to be expected from the large proportion of failures in high school subjects.

Causes for failure should be studied, and teachers should be impressed with the fact that an undue number of students failing constitutes a reflection on their teaching powers. The subjects in which most work needs to be done are: geometry, physical geography, ancient history, and German.

XVI PROVISIONS FOR SPECIAL CLASSES

Exceptional children for whom special classes should be provided may be divided into two groups. In one group will be included those children of superior ability who are able to progress much more rapidly than the average pupil, and in the other group are included all pupils who, for various reasons, are unable to progress as rapidly as the average child.

This second group may be divided into two large classes; namely, the socially competent and the socially incompetent. The first includes children who are deaf, blind, crippled, backward, or suffering from other physical handicaps. These children, through the agency of the special class, may be greatly benefited, and a large percentage of them enabled to take their place in society.

The second class of this group includes the mentally deficient who should have the opportunities offered by special classes but most of whom cannot be fitted to take their places as self-supporting individuals in society except under competent supervision.

The benefits to be derived from the formation of special classes may be considered from two standpoints; that of children remaining in the regular classes and that of children placed in the special classes. The most serious problems of the class teacher usually center about children who are so much superior to the average of the class that they can do the required work, and still have considerable spare time to spend in mischief making; or children who are so hopelessly outdistanced by the class that they have lost all interest in the work and devote very little time to the work of the class, except under the immediate direction of the teacher. Children of these types not only fail to profit by the work given in the class, but interfere with others for whom the instruction may be well suited.

Investigations show that in practically every class a considerable number of children are capable of progressing at a rate more rapid than that of the average class. It is also found that there are some children who are incapable of keeping pace

with the average class. Of the latter group, a number variously estimated at from one-half per cent to one per cent of the total enrollment of the school system are positively deficient mentally, so they do not profit by the instruction given in the regular class. Removal of these misfits, whether they be of inferior or superior ability, leaves the teacher free to devote her time and energy to the instruction of children for whom the instruction is well adapted. This improvement must necessarily result in the smaller number failing of promotion, which means a reduction in overage pupils. The child of superior ability, placed in a special class, and provided with special instruction, may be enabled thereby to complete the school course in less than the usual time. Besides the saving of time affected, the child who is thus afforded an opportunity to work up to his full capacity, develops a keener interest in the work and will acquire habits of attention and industry which are of more value than mere mastery of subject matter. The child who is merely backward or slow may, through the agency of the special class, or the special help teacher, be strengthened in his work so he may again take his place in the regular class. He is thus not only prevented from being a failure, but has increased interest, confidence, and self-respect, and a better attitude toward the work of the school.

The feeble-minded, the mentally deficient child, cannot profit except to a limited degree, by the kind of instruction given in the regular class. He should be placed in a special class where the work given is adapted to his needs and capacities. He will not only derive more profit from such instruction, but will be much happier than when in the regular class.

In a school system in a city the size of Janesville, there is not a sufficient number of children in need of special instruction to make it practicable to form all of the various special classes needed in a larger school system. The results of tests in school subjects indicate that there is need of special provision for the children who are decidedly superior or decidedly inferior to the general average in various subjects, and classes for pupils who show marked retardation in all or practically all of their school work.

Tests that were given in grades 2-8 inclusive, in the different schools, showed a wide range of ability in each subject in

every grade. (See Chap. 14). While the results of the tests show that the situation is not such as to demand extraordinary measures, it was found that there were individual cases in some of the classes where the pupils' retardation was so marked as to make it urgent that a special class or special classes be provided to relieve the situation. Cases were found where a pupil had been in the same grade for three years, and was still rated by the teacher as the poorest in the class. It was not practicable to give all of these children intelligence tests to determine their mental status, but tests were given in a few cases, and the results considered in connection with the marked retardation of those tested point strongly to mental deficiency.

A consideration of the question of establishing special classes involves consideration of the cost incurred thereby. The addition of the special teachers in charge of these classes would at first appear to be an increase in the cost of instruction, but there are other factors entering into this question which greatly reduce, if they do not entirely eliminate, this apparent increase.

On the basis of average daily attendance, the per capita cost in Janesville in the grades below the high school for the year ending June 30, 1917, was \$36.59. Every child who fails of promotion must after each failure, repeat the work of a half year. This means a proportionate increase in the cost of educating this child.

The annual report of the city superintendent for the above named year showed 105 children in the elementary grades failed of promotion at the end of the year. This will give an idea of the increased cost to the city resulting from failures. On the other hand, every child of superior ability who completes the course in less than the required time means a corresponding saving to the city.

The work of the special classes will not only decrease the number of pupils failing of promotion, but will also increase the number who complete the course in less than the usual time. When all of these factors are considered, it becomes evident that even from the standpoint of dollars and cents, a special teacher would have to prevent a comparatively small number of failures in order to save the city as much as she receives in salary.

In the case of a teacher doing corrective speech work, the aid received from the state has been, and probably will continue to be, sufficient to pay the entire salary of the teacher. The state will also pay one-third of the salary, not to exceed \$300, of one teacher employed to give instruction to exceptional children.

Recommendations

1. That one class be formed for children who are mentally deficient. The survey indicates that this class would have a membership of from 10 to 15 or possibly more. The location of this class should be determined by the geographical distribution of the pupils enrolled therein, and the available room for the accommodation of such class. All children placed in this class should be thoroughly tested and their mental status determined as accurately as possible before they are assigned to the class. The supervisor employed by the state in the Department of Public Instruction can assist greatly in this, and the State Superintendent will supply full instructions as to how this class shall be organized and conducted in order to receive the special aid from the state.

2. The employment of at least two special help teachers for the slow children and specially gifted children. A class established in the Washington or Jefferson building would be sufficient to meet the needs of these schools. One class should be established in a school on the west side of the river. To determine the location of this class would require consideration of available room and the geographical distribution of the pupils belonging in such class. On account of the rather wide distribution of the school population on this side of the river, it may be found advisable to have this teacher take charge of a class in one building in the forenoon and a class in another building in the afternoon, the pupils of these classes attending the regular classes when the special class to which they belong is not in session.

3. The continuation of corrective speech work. As time goes on, it may be found that the corrective speech work will not demand the full time of a teacher, and in that event, such spare time might be devoted to the gifted or slow pupils.

4. For the class for mentally deficient children, a teacher should be employed whose training and experience meets the

requirements fixed by the State Superintendent in the regulations governing such classes. The teacher in charge of corrective speech work must have had special preparation for this work, and it is desirable that she shall have had considerable experience in teaching, so as to understand the problems of the regular classroom. The teachers in charge of the classes for the retarded and slow children should be teachers with good training, and with several years of successful experience.

It is perhaps needless to add that all of the teachers employed in special classes should be alert and thoroughly alive to the trend of the best thought on educational problems generally, and on the special problems related to their respective fields of special work. It is not deemed necessary nor advisable that teachers in these classes be paid salaries disproportionately high as compared with salaries received by teachers in the regular classes. These teachers being chosen on account of their superior ability, training and experience must, of course, be paid a higher salary than the average grade teacher on account of the limited supply of such specially qualified teachers. This superior ability, training and added experience should constitute the basis for determining the salary, not the mere fact that they are employed as teachers in special classes.

XVII HOME COOPERATION, HEALTH, AND RECREATION

HOME COOPERATION AND RECREATION

Much of the success of the school depends upon the cooperation that exists between it and the home. Each of these agencies supplements the other in the training that it gives the child, and each is helped by the understanding and cooperation that it receives from the other. That an appreciation of this relation is becoming more general throughout the country is evident from the rapid growth of parent-teacher associations,—organizations which exist for the express purpose of promoting better understanding between the school and the home and appreciation on the part of the parents of the new ideals of education, and as a consequence, better working conditions in the schools.

Investigation of the extent of the cooperation that has been developed in Janesville reveals the fact that, in general, a good feeling exists between the home and the school. A number of teachers report visits from parents for the purpose of observing regular school work, and others report a good attendance at school entertainments. Probably nothing gives the parents a better understanding of the progress that their children are making than visits to the school with the opportunities that these afford for comparing the ability and efforts of their children with those of other members in the class. Not only do such visits dispel the erroneous idea of teacher-favoritism that some parents hold when their children are not doing well in school, but they also materially assist teachers in their understanding of the pupils. Even a slight acquaintance with parents enables teachers to better understand pupils and consequently to work more sympathetically and intelligently for the promotion of their best interests. Moreover, the parents' visits usually give teachers an assurance of cooperation that is very bracing to them in times of discouragement. For these reasons, means should be taken to encourage closer acquaintance between parents and teachers. Some teachers have undertaken

to visit the homes. One reports having called at the home of each child in her school. This is an excellent record, but one that is sometimes difficult for teachers to achieve. Parents should not make it necessary for teachers to take the initiative in this, but should recognize the burden that such an effort places upon them, and should relieve them of the necessity of it by visiting the school early in the fall so that the best understanding may be promptly established.

It is the feeling of the surveyors that though the parents have by their attendance at school programs responded well, in the main, to the school's efforts to get in touch with them, they have not been as active as is desirable in creating opportunities to understand and better school conditions. For this reason, it is suggested that the parents of each school form a parent-teachers' association and undertake a consideration of work for the benefit of the school. Excellent work has been done in many cities by such organizations.

The presidents of these associations might be made an advisory council, together with the city superintendent, high school principal, and one or two school board members, to talk over school conditions and needs, make suggestions for the work of ward associations, and bring recommendations for action before the superintendent.

Many problems will present themselves for study. Two very important lines of work that might profitably be undertaken for the first year are the subjects of health supervision and recreation of children. The need for the first of these has been mentioned elsewhere in this report. The need for the second is evident to anyone who gives the matter thought.

Nature intends that children develop physically and mentally through play. Frequently the opportunities for play offered by the school, home, and community are too meager. It is felt that this is at present the condition in Janesville. Playground apparatus and play space are urgent needs of the grades and the high school. Some of the grade teachers have taught their pupils games and have frequently gone on the playground with them to supervise their play. This condition, however, is not general. While it is asking considerable of teachers to expect them to go to the playground with their pupils at each school intermission, it is not asking too much to expect that in each build-

ing play supervision will be so organized and so distributed among the members of the teaching body that provision may be made that will result in a general pupil participation in play. The social spirit of upper grade pupils may be developed by calling upon them for assistance in directing the play of the younger children. The problem of directing play would be simplified to some extent were an adequate amount of playground apparatus supplied. A beginning has been made by placing some equipment on the grounds, but additional apparatus is needed.

The above suggestions have reference to the play periods that are directly connected with school sessions, but children have longer unoccupied periods for recreation for which provision should be made. Provision for these is considered so vital that a number of cities are employing recreational supervisors for the entire year. Such organizations as Boy Scouts and Campfire Girls without doubt offer as complete and desirable programs for the leisure of adolescent boys and girls as can be obtained. It is felt that in Janesville not enough thought has been given to the needs of these children. To be sure, certain churches have Boy Scouts, Campfire Girls, and other clubs, but these do not begin to enroll all of the young people who are in need of the opportunities that such clubs give for personal development, healthful recreation, and service.

It is, therefore, suggested that school patrons, through parent-teachers' associations, women's clubs, or other suitable agencies make a study of the needs of the young people and of the recreational opportunities offered, with a view of providing the maximum amount of wholesome recreation for them. In this way, a great deal will be done to safeguard the lives of the young people and to lead them to a useful citizenship.

England has been diligently studying the problem of the rapidly increasing numbers of juvenile delinquents. The following are the main causes.

1. Relaxation of domestic discipline.
2. The absence of fathers of families on military service.
3. A great demand for adolescent labor and preposterously high wages.
4. The inevitable withdrawal of influences making for the social improvement of boys and girls.

5. The accentuation of tendencies adversely affecting the development of character and efficiency.
6. The harmful effect of moving picture shows.
7. Disregard of responsibility for their children shown by parents.

It is also stated that there was a sad lack of parental control before the war began, but the situation is worse now. It is stated that teachers and others agree that leaders of juvenile gangs are alert and precocious boys rather of supernormal than subnormal intellects. Duller children are led into mischief.

Evil influences are bad literature, the penny dreadful, down grade posters and postcards, crime films, dark streets, and plenty of money to spend. All are agreed that the pleasures and occupations which have attracted the London children from the streets to the play centers in ever increasing numbers are,—handwork, such as cooking, both for boys and girls, sewing, knitting, basket work, carpentry, clay modeling, painting, drawing, dancing combined with old English song and nursery rhymes, musical drill, gymnastics, games, acting, and the children's library of story and picture books.

The school needs the cooperation of parents and parents need the cooperation of teachers in the effort to prevent children from falling into evil ways and to enable them to occupy their time in a profitable and pleasurable way while the school is not in session.

HEALTH

In the not remote past, a community felt that when it had supplied the school, the equipment and the teacher, its responsibility had been adequately met. The results of medical inspection throughout the country show that "in each school system, no matter where it may be located or to what social classes its patrons may belong, from 50 to 85 per cent of its pupils are suffering from one or more physical defects serious enough to require skilled attention."^{*} This being true, it is clear that supplying school equipment does not completely discharge a community's obligations. It is a matter of vital importance for it to concern itself with means for correcting poor physical conditions of children, thus making possible their best develop-

^{*} Hoag and Terman, "Health Work in Schools," page 2.

ment. Since the progress of school children is determined in large part by their physical conditions, it is evident that it is shortsighted to neglect the correction of defects when by so doing pupils' progress would be accelerated and their enjoyment of life and work increased.

The subject of pupil health has not been given proper attention in the Janesville schools. Medical inspection of school children should be incorporated as part of each year's program. A forward step was taken last year when dental inspection was introduced and provision made to give treatment to those children whose parents were unable to pay for the work. This is a commendable measure that should be continued. There is undoubtedly not a more important school matter at present demanding the attention of the Board of Education than that of health supervision. It is recommended, therefore, that this subject be taken under advisement, with a view to the permanent establishment of medical and dental inspection with a thorough system of follow-up work. This follow-up work will call for the continuance of the dental clinic and for the employment of a school nurse. In the past, the city nurse has not been expected to attend to the school's needs and would doubtless find it impossible to do so in connection with her regular city duties.

A questionnaire was sent to the teachers, asking for the number of pupils in their rooms who appeared to be suffering from removable physical defects. It was not expected that the teachers would be able to locate all of these, but that they would recognize those whose cases were extreme. They reported 177 children in present need of attention. This undoubtedly represents but a small percentage of the number. It may be safely assumed, however, that these are cases that are in urgent need of attention. One member of the survey staff noted that from a group of 15 children who were reported as making unsatisfactory progress in their work, 7 were without doubt victims of adenoids. A thorough inspection by people trained to pass judgment would reveal many more in need of corrective measures. For these reasons, it is urged that this subject be given the immediate attention of the board.

A phase of health work frequently overlooked but demanding more and more attention on the part of progressive school sys-

tems is the matter of proper nourishment. Some who cannot go home for the noonday meal must eat cold lunches. Others are under nourished or anemic when they come to school. At present it is the custom in the high school to serve warm lunches during the winter months for the benefit of nonresident pupils and others bringing their lunches to school. This is a good beginning. The work should be further extended to include warm lunches for grade children.

XVIII SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

The conclusions reached in the preceding pages are based upon facts which those intrusted with passing upon the efficiency of the school system regard as obvious. They have attempted throughout to give the school district the benefit of their unbiased judgment as to the present efficiency of its schools and the reforms which are needed. The object in view has been the improvement of school conditions in Janesville and other Wisconsin cities to which portions of this report will apply equally well.

In making the recommendations which follow the members of the survey have not been unmindful of the fact that any recommendations of merit must lie within the bounds of the city's ability to carry them out. They have endeavored to make no recommendations which might appear idealistic or which involve radical reforms. On the other hand they have felt that they would be negligent in their duty were they not to point out the most obvious and urgent needs of the schools which they believe the school district is in position to carry out. The recommendations are therefore those which the surveyors regard as representing needs that are vital and which can with reasonable effort be carried out.

Organization

The present organization in the upper grammar and lower high school grades does not permit a grouping of children of similar tastes and abilities. It is recommended that a junior high school including grades seven, eight and nine be established to meet this situation.

Buildings

The city has an unusually large number of small and outworn buildings. The present high school building is overcrowded and inadequate. To meet the present high school needs one of two building courses should be pursued:

- a. The provision of a high school plant with an athletic field and a building especially constructed and large

enough to accommodate both a junior and a senior high school.

- b. An alternative plan which would continue the present high school building as a senior high school and which would provide for a junior high school on the present Lincoln site.

To meet the needs of grades below the seventh a comprehensive future building program calling ultimately for four grade buildings which shall be centrally located with reference to each of the four quarters of the city should be adopted.

Buildings which are to be continued in use should be sufficiently remodeled to make them conform to reasonable requirements for safety and sanitation.

Teachers and Salaries

The teachers for the most part are experienced but poorly paid. The present salaries in the elementary grades do not command teachers with sufficient preparation. It is recommended that provision be made in the salary schedule for stimulating further professional preparation on the part of teachers. It is recommended that the number of kindergarten teachers be reduced from five to three.

Costs and Finance

The number of children to be trained does not show a marked rate of increase and has not done so in recent years. Janesville's wealth is relatively large. Its appropriations for education are relatively small. The expenditures for education are less than is typical among cities of its population class whether these expenditures are related to the number of pupils to be trained, the number of persons in the population or the wealth of the city. The city should provide more money for its schools and distribute its school expenditure to better advantage. Many of the recommendations of this report cannot be carried out without additional expense.

Board of Education

The city is handicapping itself by persisting in a ward method of selecting members of the board of education. The electors of the school districts should adopt the provisions of the general charter law whereby the board of education shall consist of seven members elected at large.

Census, Enrollment and Attendance

The present method of recording the school census is antiquated and inefficient. The system of census taking should be reorganized and provision made for modern and continuous census records.

The proportion of children of school age enrolled in Janesville is as large as in other Wisconsin cities. The enrollment in the high school has increased steadily in late years.

The average daily attendance is low and reveals the need of more adequate attendance supervision. It is recommended that a full time attendance officer be employed.

Records, and Reports

The schools are without a modern and efficient system of records and reports. When the results of the investigation of record forms for city school systems now under way become available a new system of school records should be adopted.

Industrial Education

Better quarters should be provided for the teaching of manual and industrial arts. This applies to the work in the elementary grades, the high school and the industrial school.

The work in industrial and manual training in the grades and in the high school should be reorganized under a single director acting as head of the department. More adequate supervision should be provided for the teachers of industrial and manual training.

There is no urgent demand on the part of manufacturers, laborers or other citizens for specialized industrial training. There is, however, a need for prevocational courses in the upper elementary and lower high school grades. It is recommended that prevocational courses be organized under the junior high school and that industrial work in the senior high school be made more definitely vocational in character.

Instruction

The quality of instruction in the high school is on the average good. In the elementary grades it is fair. In both the high school and the elementary grades there are some teachers whose work is much superior to the average and others whose work is far from satisfactory.

There is urgent need of a more adequate supply of teaching materials.

Special Subjects and Courses

Music. The series of books now in use is inadequate from the point of view both of song material and of technical method. Better and more varied material should be provided. More frequent opportunities should be given for the pupils to listen to good music. The supervisor should spend a larger proportion of her time in supervision of the instruction by the classroom teacher.

The high school instruction in music should be planned to continue systematically the work begun in the grades, and

should include both the development of appreciation and of technical power.

Drawing. There is need of correlation between courses in drawing and courses in other subjects. A larger proportion of the drawing supervisor's time should be spent in supervising the drawing teaching of other teachers.

Agriculture and School Gardening. The schools have made commendable progress in development of school gardening and courses in agriculture. It is recommended that a school plot of at least two acres be secured for demonstration and practical experiment in agriculture and that special classes in farm manual training be organized for agricultural pupils.

Library Work

Some good reading circle work is being done by the children. There is, however, insufficient stress upon the development of good taste in reading. There is urgent need of a high school library. This should be placed in charge of a trained librarian.

Course of Study and Time Allotments

The length of the school day in the primary grades should be increased to conform more nearly to the average in other American cities. The schools in the past have been severely handicapped by the absence of a modern and definite elementary course of study. The commendable beginnings that have been made in the formulation of a new course should be continued.

Results in School Subjects

As measured by the tests in a number of the fundamental subjects the children are achieving results that are not above fair. This is not true of all children, however, for a wide range of proficiency from good to poor was found in every grade and subject tested. There is a need of establishing definite objective standards of attainment, a careful analysis of the teaching methods in use and a more careful grading of the children.

Supervision

An insufficient amount of high grade supervision is provided in the elementary grades and in the high school. It is recommended that the work of each general department of instruction in the high school be organized under a competent head. Each department head should be immediately responsible to the principal under the general direction of the superintendent. It is recommended that an elementary grade supervisor who shall perform her duties under the immediate direction of the superintendent be employed.

Progress and Classification of Pupils

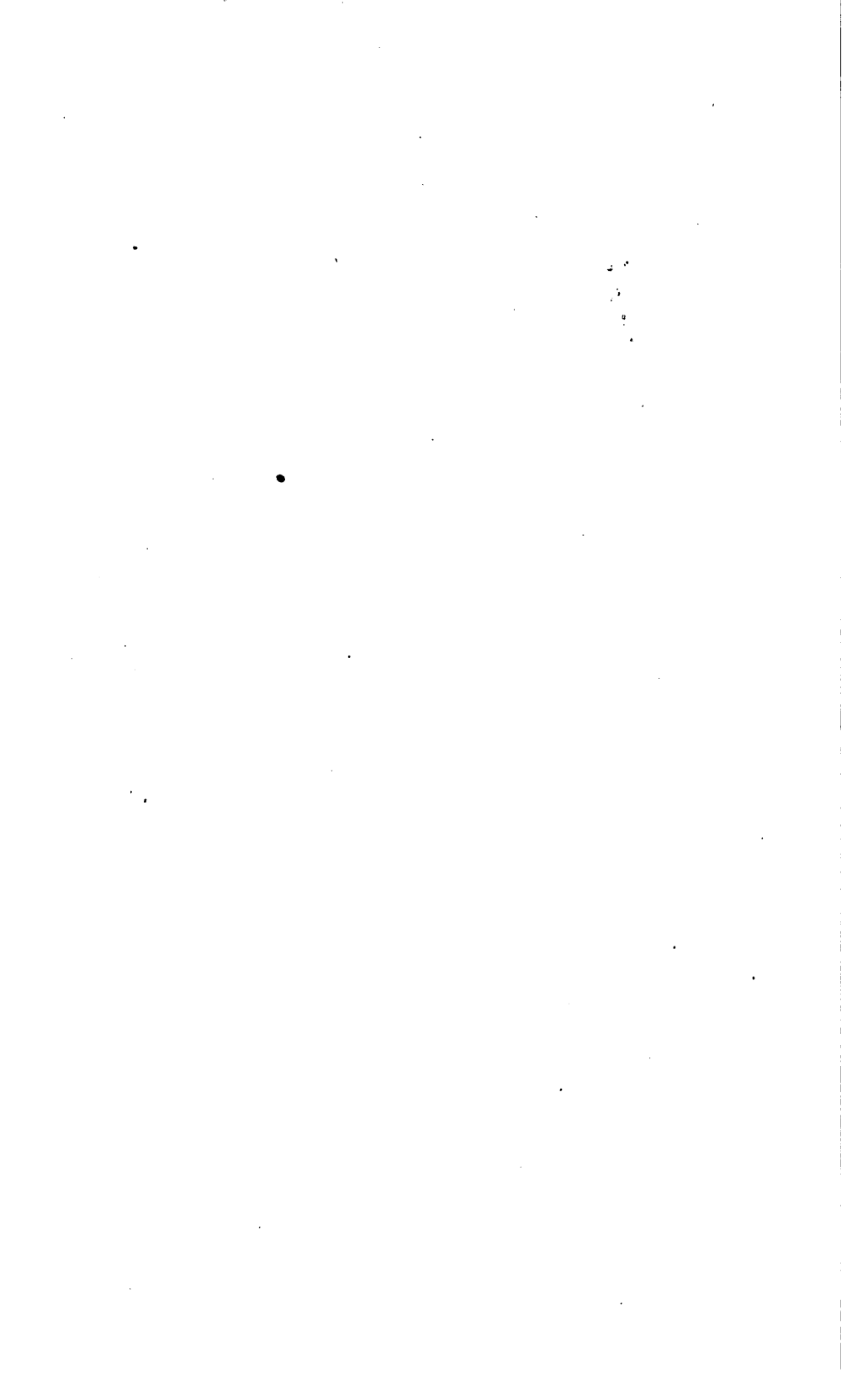
Due in large measure to the recent introduction of semi-annual promotions the proportion of overage children is relatively low, while the proportion who are underage for their grade is large. The number of normal age children is low. Janesville ranks slightly higher than the average of Wisconsin high schools in the percentage of pupils promoted at the end of the year in high school subjects.

Provisions for Special Classes

The city is to be commended for its effort to care for children with defective speech but there is an insufficient provision for other exceptional children. It is recommended that a class be organized for mentally unfortunate children and that special classes or special help teachers be provided to care for the children of superior ability, and also for the children who are of normal mentality but who show marked retardation in one or more school subjects. In addition a summer vacation school should be established to permit backward children to make up work and strong pupils to do advanced work.

Home Cooperation, Health and Recreation

Parents on the whole exhibit a wholesome desire to cooperate with the teachers and the schools. The problems of pupil health and recreational activities are in need of immediate attention. A thorough study of the matter of health supervision should be made with a view to the permanent establishment of medical and dental inspection and the employment of a school nurse.





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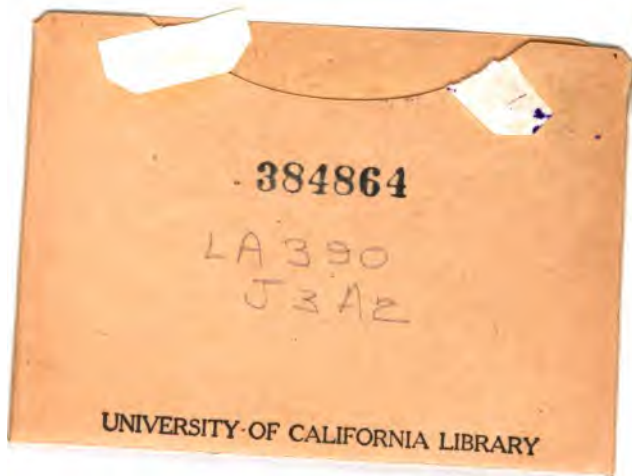
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